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CONTENTS

WHAT IS THE MATTER WITH THE COLLEGE? 343
HOMER P. RAINEY

President Rainey, of Bucknell University, finds the college lacking in definite objectives and handicapped by poor methods of teaching and inadequate selection of students.

THE ADMINISTRATION OF STUDENT PERSONNEL WORK 349
GEORGE F. ZOOK

President Zook, of the University of Akron, would center the administration of student-personnel problems in the dean of the college, and in the university type of institution in a dean of students.

GERMAN UNIVERSITIES — CARL WITTKE 355

Lehrfreiheit and Lernfreiheit remain the foundations of the German university system in spite of economic suffering and political upheaval, says Mr. Wittke, professor of history, Ohio State University.

RATING THE COLLEGE ENTRANT — ROY W. BIXLER 361

Mr. Bixler, registrar at the University of Chicago, finds confusing contradictions among the school marks and the intelligence-test scores of graduates of Chicago high schools. He summarizes, also, the reports of four other investigators confronted with similar anomalies.

COURSES IN CAREERS — ROBERT HOPPOCK 365

From the office of the field secretary of the National Vocational Guidance Association comes this summary of statements regarding courses offering vocational guidance which are listed in the catalogues of eighteen colleges.

BACKGROUND DEFICIENCIES — W. S. GUILER 369

Professor Guiler, of Miami University, finds a large percentage of Freshmen handicapped by lack of control of the fundamental processes of reading, arithmetic, and English, but they profit by remedial practice and retain much of the knowledge gained.

[*Continued on Next Page*]

CONTENTS *(Continued)*

TO UNIFY THE LIBERAL–ARTS CURRICULUM 373
HARVEY A. WOOSTER

Mr. Wooster, professor of economics at Oberlin College, finds in the concept of evolution an organizing principle for the construction of a college curriculum. The ideas presented in this article were referred to in the article by President Wilkins in the February, 1931, issue of this magazine.

WITH THE TECHNICIANS 381

Suggested forms for internal financial reports of colleges and universities, the summary of three studies of class-size at the university level, the plan for the co-ordination of institutions of higher education in Oregon, standards in the professions of medicine, law, and engineering.

THE REPORTER 386

Bulletins by National Committee on Standard Reports, inbreeding in land-grant colleges, history of the municipal university, women in chemical research, University of Chicago talking motion pictures, a new athletic policy proposed for Yale, Antioch plan adapted to the depression, and other recent news in the college field.

EDITORIAL COMMENTS W. W. CHARTERS AND W. H. COWLEY 391

REVIEWS 396

"Changes and Experiments in Liberal-Arts Education," by Kathryn McHale; "The College Library; a Descriptive Study of the Libraries in Four-Year Liberal Arts Colleges in the United States," by William M. Randall; The College Library Building, Its Planning and Equipment," by James Thayer Gerould; "College Teaching," by Theodore H. Eaton; "Jobs for the College Graduate in Science," by Edward J. Menge; "The Liberal Arts College," by Floyd Reeves.

IN THE LAY MAGAZINES FRANCES KIRKPATRICK v

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The Journal of Higher Education·· OCTOBER, 1932 II

What Is the Matter with the College?

By HOMER P. RAINEY

The Application of Scientific Methods to the Problems of Higher Education[1]

UNTIL quite recently the colleges and the scientific study of education have had little, if anything, to do with each other. In fact, the colleges have been unwilling to admit that education required scientific study. They have reluctantly admitted departments of education for the purpose of training elementary- and high-school teachers, but they have done this primarily because state departments of education require a given amount of professional training for the certification of teachers, and they must train teachers in order to hold their enrollments. But it has never been intended that these same departments or schools should turn a searching eye into their own programs, policies, and methods of instruction.

All this is being changed. Something has happened to the colleges and universities. A veritable revolution is taking place in their cloistered halls. Many of them have resisted the social demands of a rapidly changing society. They have resisted so stubbornly that society has made up its mind to leave them to their scholasticism and create new institutions more in harmony with the demands of modern life. This movement has already gone so far that many students of the problem are freely predicting their demise, and such is the fate of many. Thus we might say in beginning to list the problems needing solution in the field of higher education that, for many institutions, a major problem is how to continue their existence.

The leadership in these traditional liberal-arts institutions has been, and

[1] A paper read during the dedication of the Graduate Education Building, University of Chicago.

is, in utter confusion over the fundamental matter of function—over purpose, aims, and objectives. The American college began as a professional or vocational institution with a theological and religious background. It inherited a curriculum of theology, moral philosophy, Latin, and Greek. As the country developed it has had to do service in practically all fields of learning and the vocations. New social conditions have brought new educational objectives. In many cases the colleges were either unwilling or unable to provide the new types of education needed. Hence, new types of institutions have sprung up to provide for these new needs. The normal developing of a democratic public-school system has multiplied many times the numbers of people seeking higher education. The narrow objectives of the early college programs would no longer suffice. With the rise of a scientific and technical age has come the demand for strictly technical training as opposed to the general training of the earlier days. Since the state has entered the field as a supporter of education, we have a dual system of support, and in more recent years a third type of institution has appeared supported by philanthropists.

THUS we find the colleges swept by a veritable machine-gun fire of conflicting forces. Shall we do this, or shall we do that? Practically all of the colleges were begun by Protestant denominational groups, and refer to themselves as Christian colleges. In the last two or three decades, however, the vast majority of them have been enticed away from denominational control in order to be eligible to receive grants from the large foundations. Now many of them have been practically forsaken by their denominational groups, and they are left "without benefit of clergy." The denominational factor has almost entirely disappeared in their enrollments, and they are having a most difficult time to show any characteristics that make them distinctly Christian institutions.

Another choice from which the colleges seem unable to extricate themselves is that of general or cultural training versus professional and technical training. The result of the conflict is that many of them are trying to be all things to all men; they are spreading their curriculums over the whole preprofessional and academic area; and as a consequence of this procedure, they have developed a department store of educational novelties. In order to retain their academic respectability they still call themselves liberal-arts colleges and grant Bachelor's degrees. It is debatable whether they have a just claim to the title, for they are anything but "liberal," and most certainly they do not teach the arts. Here and there may be found one which gives a course in the "appreciation" of music or art, as the case may be, and a course in the psychology or philosophy of beauty when they have no beauty for their students to see and give them no opportunity to create anything beautiful.

What I have been trying to point out is that in solving the problems in the college area the first problem which I have had to face has been that of function or purpose. What kind of an institution is this? What educa-

tional objectives are we seeking? What is a liberal education interpreted in terms of twentieth-century America? How can it be defined with sufficient definiteness to enable one to build a curriculum of units and activities through which the objectives may be achieved?

James Truslow Adams analyzes our confusion in these words:

> Unfortunately, just as our modern system originated among the people and continued to be largely controlled by them, so it bore some of the marks of its sponsors. Not only were instruction and intelligence considered more or less synonymous, but the aim and content of education tended to be limited by the cultural standards and outlook of the class which brought it into being. It was aimed at safeguarding economic and political democracy rather than at the development of the individual, and its content was selected accordingly. To a great extent, largely because our national aims are even yet obscure to ourselves, this original confusion in our educational system has never been resolved.[2]

ON THESE two problems of the aim and content of education much research and investigation are needed. The problems here grow directly out of a complex social system and are baffling in the extreme. The objectives of elementary education are rather definite, but even before we reach the high school they begin to be more and more elusive. Think, if you will, of how long we were in arriving at the cardinal principles of secondary education, and think also of the immense amount of research and experimentation that has been employed in interpreting these principles and in putting them into operation in our schools.

Now, what techniques may we employ in formulating the principles of collegiate education for so confused a social order as this in which we live? We have had no national committee formulate a set of cardinal principles of collegiate education. The nearest approach to it which we have had was the group which President Hamilton Holt called together at Rollins College. Mr. John Dewey was one of the leading spirits on this committee, and admirable attempts were made to solve this problem, but I have not heard of their findings having been approved by any other college group or committee. The Liberal Arts College Movement has not even attempted an answer to this problem. Its declared objective is to advocate the restoration of the spiritual or religious values in higher education, but beyond this broad generalization it has made no formulation. It might render an invaluable service to higher education if it would set itself to the task of discovering and of formulating the cardinal principles of liberal education.

I will hazard the thesis that the fundamental principle upon which to build a program of liberal education is that one stated so well by Everett Dean Martin. The object of a liberal education is to train men to deal masterfully with the elements or factors of contemporary life. In our democracy every man is a freeman, and he is called upon periodically to cast his vote for the direction and control of society. Ultimately every great issue

[2] *Epic of America.* Boston: Little, Brown and Company, 1931. p. 196.

of contemporary life is referred to the citizen for his decision. If he is intelligent on these issues, he is in a position to cast his vote wisely, and he is thus a master and a freeman in a real sense. But if he is ignorant of the great issues upon which he must vote, he is a slave and a real menace to society. He is not capable of furnishing intelligent direction to society. The primary purpose of a liberal education should be that of making men intelligent on the issues of current living.

If this generalization is acceptable as a starting point, the next step would be to discover these factors of modern life and set students to work upon the mastery of them. Some of these problems are evident and suggest themselves immediately. Economics is the most fundamental factor in current life. It is the common denominator of the world's life. The problem of human relationships is also universal. The problem of individual and group control or government is another. The problem of an individual's philosophical or religious adjustment to the meaning of life cannot be overlooked. Thus, the content of a curriculum might be discovered, but the details of this procedure will require the highest types of sociological research.

NOW, the next problem which arises is that of the selection of students for the type of education which the institution has to offer. Someone may raise the objection at this point that the students should be considered first in arriving at the objectives of education in the college. This is certainly true of the public elementary and secondary schools, but I believe that colleges of the type which I represent should determine their objectives and the type of education which they desire to offer, and then carefully select students whose interests and abilities lie in the fields and leave other types of institutions to meet other social needs for other groups of students. The acceptance of this point of view by a given college would greatly simplify its problems.

No more strenuous battles have been waged in the field of higher education than those which have been fought over the problem of entrance requirements. The problem of the selection of students converges, of course, at this point. All are familiar with the conventional methods of selecting students for college—fifteen units of high-school work, college-board examinations, high-school diplomas, rank in high-school class, intelligence ratings, and the like. It is also unnecessary to point out just how unsatisfactory these methods have been. They have not served to coordinate a student's high-school work with his college work as they should. College curriculums have been prescribed and enforced almost without regard to the student's high-school studies. There has been little or no attempt to consider his educational career as continuous. Furthermore, little or nothing is indicated about the student's interests and specific aptitudes. More study and research are needed in these fields in order to determine reliable indexes of ability to do college work and to discover special aptitudes. In the use of aptitude tests the American Medical Associa-

tion has made a notable beginning. Many years of careful study will be needed to perfect their use. Similar tests in other professional fields are a real need in order to perfect a program of educational and personal guidance. If someone could develop such a test or series of tests for the selection of teaching aptitudes and talent, he would render a notable service to the teaching profession.

ANOTHER method of selection of students which promises much in dealing with this problem is the system of individual case records. The Carnegie Corporation in the Pennsylvania study is trying, by means of cumulative objective measurements of an individual's attainments and progress, to establish a sound basis for educational guidance. The study involves the progressive measurement and record of about twelve thousand children who began the seventh grade in the fall of 1928, and the pupils concerned entered the senior high school in September, 1931. Two short paragraphs from this study will emphasize the essential features of the record.

With the beginning of this stage of the project certain centers that have been particularly active in the study have seized the opportunity to create special classes and a special curriculum for pupils whose disposition and achievement have revealed a high capacity for independent academic work. It is proposed to allow these pupils great personal freedom of action, to stimulate their native interests by bringing them together for long periods (three years) under the guidance of the same teachers, and to measure them frequently in all branches of their education, whether pursued in school or elsewhere.

One instrument that is indispensable for such a program of free achievement and adequate measurement is a record that is accurate, comprehensive, and significant. The study has developed such a record, and, with the results of three year's testing available, is now in a position to lay before each college, three years in advance, the records of the pupils in the special classes who plan to attend that college. This will be done at the close of each of the next three years in order that the college may have abundant opportunity to study the records, and that school and college may cooperate in furthering the best interests of the pupil.[3]

The first set of these records came to us last fall after the pupils had completed their first year in high school. Our colleges will receive these records each year as the pupils progress through high school, and in this way we shall have an excellent educational history of the pupils' achievement. This will provide a sound summary of their interests, needs, and achievements. It is now quite commonly believed that the abilities, qualities, and interests of the individual are the matters of first consideration in choosing a profession, vocation, or occupation and in making the necessary preparation for it.

There is one other problem I should like to mention before concluding this analysis. It is one of which I, as an administrator, am becoming more and more conscious. It is an administrative problem of the first order, the problem of discovering and inaugurating methods of instruction that will foster and encourage a

[3] "Progress Report IV." Study of the Relations of Secondary and Higher Education in Pennsylvania. The Carnegie Foundation for the Advancement of Teaching.

genuine process of education. I rebel more and more at the extreme artificiality and superficiality of many of our college programs. The matter of responsibility for learning is a case in point. Students come with no intellectual interests and no real desire for learning. Their attitude is: "Well, here I am. Educate me if you can." The faculty begins by trying to assume all the responsibility for the student's education which he declines to assume himself, and I am constantly amazed at the ingenuity of the faculty in devising schemes to get the student to do what he has no interest in doing and for which he will assume no responsibility. The result is there is a preponderance of teaching on the part of the faculty, and a minimum of study and learning on the part of the student. I am convinced that college faculties are doing entirely too much teaching, or, at least, are attempting to do too much. Thus, we are burdened with all sorts of artificialities—required class attendance, marks, credit points, class assignments, and lesson-learning—a textbook-time concept of education, and other evils which rob education of its genuine values.

My belief is that our system of instruction is responsible for these conditions. Most people require mental symbols for their thinking and are unable to think in terms of abstractions. This principle applied to education means that the concepts of education which most people have grow directly out of the system of education which they know. The only way that I know to give such people a valid concept of education is to create for them another set of symbols or another system which is predicated upon vital educational principles, and thus condition the desired response.

The achieving at this result is going to require years of careful and patient experimentation with administrative and teaching techniques. Here the University of Chicago is blazing new trails in the major experiments now in progress. Numerous other institutions in a smaller way are also attacking these problems. The goal to be desired is a new attitude on the part of students relative to their education. They must come to understand that the vital factor in education is what they learn to do for themselves. When this attitude comes to be commonly held by American students, college education will then enter upon its golden age.

The Administration of Student Personnel Work

By GEORGE F. ZOOK

The Responsibility of Student-Personnel Work, though Belonging to the Dean, Should Be Shared by All Faculty Members

THERE are two main aspects of personnel work, scientific data, on the one hand, and the conference or advisory function, on the other. The first includes all kinds of formal high-school and college marks, records, personal data, and the results of all tests. The second includes impressions and observations secured by the personnel officer as a result of conferences with the individual student. To a considerable extent these impressions may also be reduced to record. A complete record concerning each student, therefore, seems to be the most important single consideration in the discussion of this topic. To avoid expensive duplication and to secure unity in the personnel program, this record should be centralized in one office. The health service, for example, may of course keep more detailed records of a student's physical condition and development, and the official accounting of the high-school and college record is naturally on file in the registrar's office. If there is need for these records they should, of course, be available.

For personnel purposes, however, these records should be reduced to chart form such as we have in the personnel-record card issued by the personnel committee of the American Council on Education.[1] Such a card gives us a complete picture of the high-school and college record, test scores, special interests, physical condition, hobbies, and faculty actions pertaining to each student, so arranged as to show at a glance the range of native ability, the quality of work he has performed in his several studies, and the development of his special interests; in other words, the whole trend of the student's development. When the personnel-record card is supplemented by ratings as to his habits and characteristics which have been returned by his teachers and others with whom he has come in contact, one has at hand relative to each student information which is so extensive as to enable the personnel officer to proceed with surprising accuracy. Indeed, the results of personnel work are exceedingly gratifying.

I have alluded to personnel records not for the purpose of accurately describing them, but rather to indicate

[1] "Personal Record Cards for Schools and Colleges," *Educational Record*, IX (July, 1928), pp. 18–21.

the extent of them. Any review of this situation leads to the inevitable conclusion that personnel records should be centered in a single office or at any rate under the control of a unified organization.

The question which we are all asking one another is, How shall the various phases of personnel work be integrated into the administrative organization of an institution? When we turn to the literature of personnel work, we find most of the writers on the subject also calling attention to the urgent necessity for co-ordinating the efforts of the officers engaging in various phases of personnel work, but offering few specific suggestions as to how it may all be accomplished.

Many of them feel quite properly that there is no single solution to this problem. Institutions so vary in size and in the number of curriculums offered as to make specific suggestions difficult. Also, as has been pointed out, personnel work is an idea, not an organization, in which all officers and every member of the faculty share solemn responsibilities. Nevertheless, I believe that much can be done toward clarifying the situation, although it may be that the particular suggestions which I offer will not solve all the problems involved.

I SHALL begin with the dean. The dean of a small college of liberal arts, as well as the dean of a major division in a university, is a personnel officer. First of all, he has a major responsibility in the selection and development of members of the faculty; second, he joins with the heads of departments in offering educational advice to individual students relative to modifications of their curriculums; finally, he is the responsible authority for most administrative actions applying to individual students. I realize that inadequate office help and the temptation to allow office details to engross one's attention have prevented many a dean from performing well his function of leadership in the upbuilding of a faculty and in keeping the courses abreast of the times.

Under these circumstances we encounter altogether too many deans who are almost wholly unacquainted with and hence unsympathetic toward the newer phases of personnel work which have been introduced during the last twenty years. I regard this situation as the key to our present difficulties. It is unnecessary for the dean himself to be fully conversant with *sigmas* and correlations, but he ought to be aggressively in favor of using every scientific facility and experimental procedure which give promise of enabling him or other members of the faculty to deal more intelligently with individual students. The day is at hand when college deans must be educators as well as professors on parole.

This statement applies equally to the officials in large universities and in small colleges. We have no business in our large institutions to treat any student as just one more among several thousand others. There should be a sufficient number of major and subordinate officials, respectively, to set up a complete system of individualizing any student. In it both scientific inquiry and conference methods should play appropriate parts.

In the small institution the total number of officials involved may be greatly reduced, but the service rendered should be just as complete and on as high a plane as in the large university. The small institution will not survive if its personnel service is not scientific and effective. Indeed, any educational unit, large or small, to endure must be effective.

If the institution is a single-type organization with one dean in charge, the correlation of all student-personnel matters is greatly simplified.

THE dean of an independent college of liberal arts should have as subordinates for personnel work the examiner who is responsible for the selection of students admitted to the college, the director of Freshman Week who is responsible for the orientation of the student in college life, the director of the testing program, the student advisers, the vocational counselor, the director of the placement bureau, the deans of men and women, respectively, the director of the student health service, and the heads of the department of physical education including athletics. These individuals, depending on the size of the institution, may be full-time or part-time appointees, or these functions may respectively be concentrated into a smaller group of individuals. Finally, they and others may serve as members of a standing personnel committee of the faculty with the dean as chairman. In this capacity they serve partly an administrative purpose for the discussion of individual students but primarily for the continuous development of institutional policy relative to personnel work. In any case, however, the dean should, even if he spends a large part of his time on faculty personnel and curriculum problems, be the conscious and aggressive leader of the personnel work. Indeed, it seems almost inconceivable that the personnel work can succeed in a small college without his active guidance and sympathy. But there should also be no dearth of facilities and services available for his assistance simply because the institution is a small college. The dean is responsible, but cannot do it all by himself.

The real complications in the organization of personnel work are found in the university with two or more major divisions including, for example, engineering, pharmacy, agriculture, and teacher training, as well as liberal arts. Generally there is the accompanying significant circumstance of an institution with a large enrollment of students.

In this type of institution it is obviously impossible to have a concentration of authority such as one has in the single-division institution under one dean for every major division of the institution. He has a degree of authority in his division scarcely less in extent than is exercised by the dean in the independent college.

Furthermore, in the very nature of the case the dean of a major division in a university has likely concentrated his attention more largely on the selection of a competent faculty, adapting the curriculum to changing circumstances and the development of proper relations with his clientèle outside the institution. If he deals with individual students, it is often

with the disciplinary cases and occasionally as an educational adviser to some student who is in doubt as to what course he should choose among the small number of electives he is allowed. The faculty, also, in the large institution ordinarily form close personal relationships with a smaller number of students than is usually the case in the small college.

IN FACT, everything in the situation at our large institutions points to the necessity for a separate organization of personnel work. At the same time, there is as much, if not greater, need for centralizing the conduct of the work as in the small college. The president should, therefore, select a dean of students for the entire institution who should be charged with the responsibility for all student-welfare and personnel work. The divisions of work, university examiner, director of Freshman Week, student advisers, recreation director, vocational counselors, placement bureau, head of the department of physical education, and the director of the student-health service, will not be so different from those in the small college, but obviously they will more often be employed on a full-time basis for this work.

In this organization I am not certain that I would have a place for a dean of men and dean of women or even for a personnel director as such. It seems to me that each of these two types of service in their original forms are only parts of a much larger service which came into being in response to two separate and distinct movements: first, more conferences with individual students, and second, more scientific data relative to each student. Officials who go by these names were born under different circumstances at each institution, and each has developed along somewhat different lines. There is at the present time, therefore, no agreement on the functions to be included in the scope of these offices. I suggest, therefore, the inclusive office of dean of students with all student-welfare and personnel work integrated into a single organization. If the title "director of personnel work" for this office is preferred, I shall not quarrel. There is not so much in a name. The important thing is that the functions included under the office should be complete and that they should be thoroughly integrated into one effective centralized system.

At once one should hasten to say that the personnel organization cannot be and should not be entirely independent of the deans of the colleges. For example, so far as number of semester-hours to be taken by the student, change of courses, and most disciplinary measures are concerned, the authority of the dean of the college is complete and that of the dean of students merely advisory. In fact, if the dean of students or any part of his organization acts in a disciplinary matter, it should be subordinate to the dean of the college. Even the welfare, advisory, and research functions of the personnel organization are of course all for the benefit of students who, from an administrative point of view, are enrolled in the college of liberal arts or the school of engineering, and the like.

The glory of the dean of students

and each of the subordinates in his organization does not therefore lie in the amount of administrative authority which he and his subordinates exercise, but rather in the influence resulting from the excellence of the service which they render. The dean of the college may select a great faculty, lead in the construction of a modern curriculum, and administer wisely the rules and regulations, but the personnel organization should touch and guide the individual student in a hundred other ways through the formative years of his college life.

Toward some such system as I have described we seem to be slowly but surely evolving. Purdue University, under the leadership of Dean Walters and his associates, has made great progress in centralizing the personnel work on the basis of assistance to the individual student. Several years ago the speaker, in co-operation with Chancellor Capen and F. J. Kelly, suggested the triplicate organization under the president of a provost, dean of student affairs, and finance officer of the University of Pennsylvania. The first was to have the chief responsibility for educational and research interests, personnel and organization of the faculty, courses of study, and the administration of students. A short time ago the University of Oregon took a marked step in advance by arranging a similar concentration of personnel work. George Washington University in its recent reorganization has conferred upon the new divisions in the senior college the responsibility for curriculums, methods of instruction, and the requirements for graduation. The heads of these divisions administer these regulations. In their case, the dean of the senior college serves in the capacity of student-personnel director.

At the University of Chicago where the most sweeping reorganization of administration has just taken place, there is a clear-cut recognition of the administrative and personnel functions, respectively. The details have not as yet been worked out, but President Hutchins describes the new situation as follows:

> When the divisional deans [in the senior college and graduate work] were appointed it at once became clear that something would have to be done to co-ordinate the University's relations with students and to relieve the deans of questions of educational guidance and social control. It was also clear that the burden of developing, administering, and testing general examinations would be enormous, and that in the business of carrying it the faculty would demand expert assistance and advice. In addition the President's office wished to place in the hands of one person the administration of the numerous independent units dealing with the various phases of student life and work. On December 17, therefore, the Senate approved the appointment of a new officer to be known as Dean of Students and University Examiner, to have charge of student affairs and to be chairman of a Board of Examiners which will bear the load of the general examinations.[2]

WHETHER or not many institutions can go so far in educational guidance for individual students as is being done at Harvard and Princeton is a good deal of a question. It is an expensive procedure, but the

[2] "The Reorganization of the University," *University Record*, XVII (January, 1931), pp. 1–9.

individual student is certainly entitled to adequate opportunities for stimulation of all his latent powers and special interests.

Is this not indeed the responsibility of every college officer and teacher who comes in contact with the individual student? We learn every day in the field of politics that no piece of governmental machinery, no matter how perfectly set up, succeeds automatically. The political cankers of today were the reform measures of yesterday. The political mechanism to which we attach most faith today will probably be dead timber tomorrow. So, too, in the educational world we ought not to fix our faith indefinitely on any administrative device. Here, as in any social organization, it is the spirit breathed into the system which counts. No one person, the president, dean, or instructor, can do it alone. Each and all of them should have that spark of personality which will set on fire the differing types of intellectual tinder which are always to be found in the young men and young women who, each year, hopefully knock at our doors.

German Universities

By CARL WITTKE

Observations Regarding the Changes since the Close of the World War

THE German Revolution of 1918 and the consequent establishment of a republican form of government profoundly affected the educational system of the German people, and led to a period of experimentation which has attracted too little attention among American students of the methods of higher learning. The old pre-war conception of the German university as a combination of teaching and research fortunately has been carried over into the new order, and the ideal of the German secondary-school system continues to be cultural, and not vocational, training. But the republic has done much to close the social gap which once existed between the common schools and the *Gymnasium*, and to provide opportunities, with public support, for the gifted few to develop their capacities in the higher educational institutions, regardless of the social classes from which they sprung. At the close of the elementary-school years, an attempt is made to recognize the diversity of capacity and aim which exists among students and to direct them henceforth along those paths of higher education to which they seem, by endowment, to be best adapted. New Germany may be eager to realize a social and political democracy, but it has not made the mistake of assuming that there can be such a thing as an intellectual democracy.

There has been a rapid increase since the war in the number of students enrolled in German universities. Before the war, the total number did not exceed seventy-three thousand; in 1931, it reached one hundred twenty thousand. About one out of every five students depends on working his way through the university, either wholly or in part, through outside employment. This is an entirely new phenomenon in German university circles, and already many of the professors complain of a consequent lowering of standards and an undue increase in the size of the student body. At the University of Berlin, which had approximately sixteen thousand students last year, it has been estimated that only two-thirds received as much as $30 monthly from home, and nearly a fourth received less than $20 a month. The Student Employment Exchange has been kept exceedingly busy in an attempt to provide jobs for the needy.

The poor student who has demonstrated his capacity for university work, as the result of a rigid system

of selection which eliminates the unfit, receives many forms of state support. He pays no fees at the university, his textbooks are free, and on most purchases which he makes, for clothing, medical treatment, and transportation and tickets to theaters and concerts, he receives substantial reductions in price. At the student *Mensa* of the University of Munich, and at most other German universities, a student may get plain but wholesome food sufficient to keep body and soul together at 10 or 15 pfennigs a meal. At Munich, about four thousand students are served each day. Incidentally, the daily milk consumption of these four thousand Munich students is 2,000 liters; their beer consumption averages about 25 half-liters per day, eloquent testimony of the inroads made on old student beer-drinking habits by economic necessity and the youth movement which goes in enthusiastically for sports and therefore avoids all alcoholic beverages.

A GREAT many young people who have been deprived of the opportunities for gainful employment, due to the continued economic depression, have entered the universities, to acquire more education pending the return of better times. When they are graduated, they find themselves still without means to earn livelihoods. It has been estimated that by 1934 there will be 130,000 graduates of Germany's higher institutions without employment. The number of women students has greatly increased since the war, also. It is literally true today that there are hundreds of capable university graduates, men and women of excellent training and character, who have never worked a day since graduation. One may easily imagine the consequences of such a situation on the moral fiber of the nation.

Immediately after the close of the war the study of law and political science attracted hundreds of German university students. It was necessary to fill a vast number of new offices in the republican government and in the various organizations that had arisen since the revolution, and with characteristic German thoroughness and a greater appreciation for the need of experts in a democracy than America has ever had, the youth of Germany began to prepare in the universities for these new public services. Since 1928, however, there has been a steady decrease—nearly 25 per cent—in the enrollment in these fields of study. From 1928 to 1931 the study of foreign languages in the universities and *Technische Hochschule* has fallen off about 50 per cent, and mathematics, physics, geography, biology, and the natural sciences, 33 per cent. The economic crisis of the last three years is reflected in a decrease of 66 per cent in the enrollment in engineering courses, and of 50 per cent in courses in architecture. On the other hand, the enrollment in medicine has increased 50 per cent; dentistry, 57 per cent; veterinary medicine, 120 per cent; and pharmacy, over 33 per cent. The number of students primarily interested in philosophy and pedagogy increased over 70 per cent in the last three years, but this rate of expansion is no longer being maintained. Economics shows an increase of 25 per cent; evangelical theology, more than

66 per cent; and the study of Catholic theology, over 25 per cent.

The total number of students enrolled in German universities is still going up, but the rate of increase is declining rapidly. The increase from the summer semester of 1930 to the summer semester of 1931 was less than one per cent, and in the summer semester of 1931, 22.4 per cent of all new matriculations were women students. The *Technische Hochschule* shows a greater decline than the universities show in enrollment statistics.

Politics is seething among German university students. This past summer it became necessary to close the University of Berlin temporarily because of student Communist and Nazi riots, and there have been disturbances elsewhere. At Munich, it has been estimated that 70 per cent of the student body are Nazis, enthusiastic followers of Adolf Hitler. Their enthusiasm frequently becomes manifest in the lecture-room, and numerous professors have been interrupted by spontaneous demonstrations of approval or disapproval, whenever their lectures seemed to reveal references to the present state of political affairs. A charming and popular lecturer on English literature at Munich invariably receives thunderous applause from the Hitlerites for references to dictators like Cromwell, and threatening letters for his comments on Disraeli ("a dirty Jew") as one of the list of literary figures in nineteenth-century England. At other institutions, derogatory references to Germany's part in the war or to the unhappy peace treaties of Brest Litovsk and with Roumania have actually precipitated student strikes. During the academic year 1931–32, there were serious student riots at Halle because of protests against the Christian pacifist utterances of a professor of practical theology. When well-qualified students with their Doctors' degrees and their state examinations successfully passed are told by the Ministry of Education that no positions will be available for them for at least ten or twelve years after graduation, it is not difficult to understand why extremist political parties find hundreds of recruits among the young German *intelligentsia*.

THE fine old traditions of *Lehrfreiheit* and *Lernfreiheit* remain the foundation stones of the German university system in spite of economic suffering and political upheaval. *Lehrfreiheit* guarantees complete freedom of teaching to the professor, and he is under no supervision whatever, either from the faculty or the Ministry of Education. *Lernfreiheit* implies the right of the student to select his own teachers, and to wander about from one university to another in search of the men with whom he wishes to study. There is no complicated arithmetical accumulation of a magic number of points or credits—success or failure continues to depend on a comprehensive examination at the end. Professors owe their appointments to invitation by the faculty, who usually submit three names to the Ministry of Education from which the Minister may make an appointment. In most universities, the powers of the faculty are jealously guarded against everything that might smack of political or governmental intervention. The

American university president is unknown in Germany. A *Kurator* looks after business matters, and a *Rektor* is elected from the faculty annually as the titular head of the institution for the time being. All important business is transacted by faculty committees, and boards of trustees or boards of regents, who might be tempted to meddle in educational affairs which should be left to the faculties, are unheard of in Germany. The university remains essentially a corporation of students and teachers and research workers.

Professors are even more secure in their positions under the republic than they were in pre-war days. The *ordinarii* (professors) are well paid, and until recently supplemented their salaries by the *Kolleg-Gelder* (fees) which students pay for the privilege of listening to their lectures. This system of fees was designed as a stimulus to the brilliant professor, and as an inducement for him to stay in the educational field. On the other hand, it has led to abuses. It leads to an overemphasis of popular subjects and to a retention of the lecture method because it pays better. Men who have long since passed their prime may cling tenaciously to large lecture classes of five hundred and refuse to bring in assistants or block new appointments in order that they may retain a monopoly of these student fees. There are seminars in some of the larger German universities today with enrollments of 100 to 150 students. Even though the professor may devote himself to his chosen few in so large a group, the seminar method obviously becomes a farce under these conditions.

That all is not entirely well in German higher education may readily be gleaned from conversations with German university teachers or from a casual perusal of the vast amount of literature coming out in Germany today on pedagogical questions. Part of the difficulty goes back to the war. Professors have lost their savings and are forced to take on extra burdens which affect their productivity as teachers and scholars. Building programs have been seriously crippled by the continuing depression, and even the largest libraries reveal serious gaps in their book and periodical collections for the war years and the years of inflation and deflation which followed. The institution of the *Privatdozent*, which Flexner correctly called "the nursery of German scholarship," is in grave danger of extinction. By wiping out the middle class, the war helped to wipe out the class from which the *Privatdozent* was generally recruited. Vocationalism is slowly getting a foothold in some universities, and chairs of journalism, physical education, and business have been added to the older faculties. There is a lively discussion in progress concerning the effectiveness of the work done on the secondary level, the textbooks used in the *Gymnasium* are under fire, and much energy is expended on a discussion of the relative merits of the lecture method of instruction, as contrasted with discussion sections and the "socialized recitation." An article by Hermann Heller on *Universitätsreform*, appearing in the *Neue Rundschau* for May, 1931, may serve as an example of discussions which attack some of these problems on the uni-

versity level. This professor deplores the confusion that results from an indiscriminate intermixture of scientific, professional, and cultural aims in the university curriculums. Classes are too large; proposals have been made to introduce two "college years," on the model of the American junior college, to correct the defects in secondary training; and it has been suggested that an examination should be introduced at the end of the student's third semester in the university to determine his fitness to go on into what in the United States might be called "the senior division." There is vigorous discussion of ways and means to protect the purity and sanctity of the Ph.D., which, it is claimed, is rapidly being reduced to a joke in some institutions. Orientation courses in the first year or capstone courses of a general cultural value in the last year of the student's university career have been seriously considered. Carl H. Becker, as Prussian *Kulturminister*, made radical changes in the Prussian school system, particularly in the creation of new teacher-training institutions, and the merits of these reforms continue to be a subject of controversy among the school men of Germany. Finally, the temper of the majority of German university professors is still rather conservative, and their attitude toward the experiment in republicanism is somewhat skeptical. Moreover, some excellent scholars and teachers have not been altogether happy in their university contacts, because of their differences with the majority of their colleagues, especially in questions concerning politics and economics.

THE free elective system has resulted in the neglect of many subjects and courses which the student might take with profit. Indeed, a few professors have on that account had the temerity to attack the much-praised *Lernfreiheit* of the German university and to propose a compromise between the system of free electives and the group requirements of the American colleges. Students naturally are in a hurry to complete their university years. The tendency is to take only such courses as lead directly to the examination, and to work only with the full professors who are likely to be on the final examining board. As a result, many worth-while courses and fields are being neglected. There is, for example, a growing feeling in Germany that closer cultural contacts should be established with the United States, and that the serious study of American history should be introduced in German university curriculums. Laudable beginnings have been made in this direction at Hamburg, Heidelberg, Cologne, Göttingen, and Berlin. But at Heidelberg, a few years ago, the professor who offered a course of lectures on United States history had to lecture to four students. At Berlin, the class contains a half-dozen officers of the *Reichswehr* and prospective attachés of the Foreign Office who are ordered to attend, but only a handful of regular students. The *Deutsche Akademie* of Munich made an effort to stimulate a wider appreciation of the value and necessity of studying American history by promoting a series of lectures at German universities, by a historian from the United States, as part of the George

Washington bicentennial celebration this year, and plans are being developed to endow a George Washington professorship for American history at the University of Munich.

That German scholars are deeply appreciative of the financial aid they have received from America in these difficult times is evident at every German university. Many German students have found it possible to remain at their books only because Americans have been willing to contribute to the maintenance of a *Studentenheim* at almost every German university. At Breslau, the new Zoölogical Institute is a gift from America. At Munich, a magnificent ultra-modern laboratory for physical chemistry is another evidence of American generosity. Had it not been for the Rockefeller Fund one of the most distinguished bacteriologists in the world would have had to discontinue his researches at Freiburg. At Heidelberg, a gift of half a million dollars, collected in the United States largely by the efforts of former Ambassador Schurman, made possible the erection of the most modern university building in Germany, and a similar amount, also from the United States, is available to complete the new quadrangle. At the University of Munich, provision has been made for an American "junior year," whereby American college students can spend their third year abroad and pursue a special course which is fully accredited by American colleges. This new form of international co-operation is attracting much attention, and it is highly probable that similar programs for American college students may be set up in other German universities. In a world torn as ours is today by nationalist rivalry and stupidity, the genuine, heartfelt tribute of German scholars to their generous American benefactors may serve as a faint ray of hope to those who refuse to give up the dream of a better international understanding.

Rating the College Entrant

By ROY W. BIXLER

Significance of Variation in the Intelligence of School Population and in Standards of Marking

IF THE number of words written about it were a fair measure of the existing knowledge of the science of selecting college entrants, the law of diminishing returns would make further contributions difficult indeed. The writer, having been more or less involved for several years in the administration of a system of "selective admissions," continues to grope for knowledge in the field. Believing that others are groping, too, he is willing to take the risk of being charged with contributing merely to the verbiage in the presentation of this report.

The investigations of this perplexing problem have thus far contributed four important working facts, as follows: first, the high-school marks, in general, constitute a fairly reliable index for predicting college marks; second, the score in any one of several types of aptitude tests constitutes a fairly reliable index for predicting college marks; third, an index that is more reliable than either of those already mentioned can be obtained by checking one with the other; fourth, there is no relation between the pattern of high-school subjects and scholastic success in college. This report submits, for further study and application, a fifth proposition, namely, that the variation among high schools of the scholastic aptitude of their graduates and the variation in the standards of marking are so great that any index based on school marks is subject to gross misinterpretation. This proposition is supported by facts which follow.

The American Council Psychological Examination was given in June, 1931, to the graduating classes of fifty high schools in Chicago. The range of the individual scores was from 4 to 334, with a possible score of 370, and the range of the median scores of the classes was from 65.0 to 201.4. The lowest median score was lower than the lowest individual scores in six schools. The median scores in three schools were as high as, or higher than, the median scores of the 1930 freshman class at the University of Chicago. That institution could have admitted every member of the graduating classes of these three schools without lowering the scholastic aptitude of the freshman class as measured by this test, but the scholastic aptitude of this class would have been lowered by the admission of the upper quarter only of the classes of ten other schools.

The study revealed a similar variation of scholastic aptitude as measured

by school marks. There was a difference of more than 10 per cent from the lowest to the highest median of the average school marks, the lowest being 79.5 and the highest, 90.3. The school having the lowest median of the average marks had also the lowest median psychological-examination score, but the school having the highest median of the average marks had next to the lowest median psychological-examination score, a score of 74.0. The correlation of the ranks of the schools on the psychological-examination scores and on the school marks was $-.13 \pm .13$.

The coefficient of correlation between the individual psychological scores and the individual average marks of the entire group was $.40 \pm .00$. When the correlation was determined by schools, variation was again the most striking observation. The lowest coefficient was $.13 \pm .07$ and the highest, in which an adequate number of cases was involved, was $.59 \pm .04$. The school having the lowest psychological-examination score produced the lowest coefficient of correlation, and the school having next to the highest psychological-examination score had the highest coefficient of correlation.

The cases of individual exceptions to the correlation are quite as significant as the range of correlation. To illustrate this situation, the records of a few individuals whose rank in class, as determined by the one index, fails to correspond, even roughly, to the rank in class as determined by the other, are presented in Table I. There is a severe intellectual irritant in the presence, in the same class, of one student whose rank is 269 as determined by school marks and 3 as determined by the examination scores, and of another whose rank is 6 as determined by school marks and 247 as determined by examination scores (*see* Students 3 and 5 of Table I).

The values of the average school marks, between 70 and 100, in terms of the scores on the psychological examination were decided by finding the median psychological-examination score in each category of marks. Great variation among schools was again observed. The range of the values of the average school mark of 85 was from 75 to 180; of the mark of 81, from 70 to 225; of the mark of 91, from 80 to 230. The mark of 79 in one school was better than the mark of 95 in eleven schools, while the mark of 95 in one school was poorer than the mark of 81 in eleven schools.

TABLE I

COMPARISON OF RANK IN CLASS BY SCHOOL MARKS AND PSYCHOLOGICAL-TEST SCORES

STUDENT	RANK IN CLASS		
	By School Marks	By Psychological-Examination Score	Number in Class
(1)	(2)	(3)	(4)
1	259	16	344
2	334	4	410
3	269	3	451
4	223	4	344
5	6	247	451
6	8	224	549
7	4	119	187
8	4	216	332

RESULTS similar to those of the present study have been reported by other investigators of the problem. At the University of Chicago a study was made of the standards of marking in the Chicago public

high schools as measured by the average marks and relative success in college of the graduates who entered the University. The author found a range among schools of 4.56 per cent (84.94 to 89.5) in the average marks of those who entered the University and a range among schools of 5.49 per cent in the value of these average marks in predicting scholarship in the University. Although the University of Chicago at that time had a minimum scholarship requirement of 81.25 on a passing mark of 75.0, the average mark of the students admitted from the school marking highest was equivalent to only 77.4; the average of the students admitted from the school marking lowest was equal to 82.95.[1]

The Ohio State University Psychological Test was given in April, 1929, to 16,619 high-school Seniors in 434 public and 14 private high schools in the state of Wisconsin. The authors of the report of the results of this and other testing in the state show the school differences in the median percentile scores. In 18 schools the class medians were at the 75th-percentile and above, and in 19 schools the medians were at the 25th-percentile and below. "The valedictorian in one graduating class may not reach the lower quartile point in scholastic aptitude in another graduating class."

This study also reports the effect, in terms of a coefficient of multiple correlation, of combining the school marks and psychological-examination scores for the purpose of predicting scholarship in college. The correlation between school and college marks was .61±.015, and between the scores on the American Council Psychological Examination and college marks, .59± .026. By combining the school marks and psychological-examination scores, the correlation with college marks was increased to .71±.012.[2]

Many workers have reported coefficients of correlation between high-school marks and college marks and between aptitude-test scores and college marks, and some have reported coefficients of multiple correlation of the three variables. Harl R. Douglass in a recent monograph has assembled a large number of these, giving the names of the workers, the tests used, and the institutions in which the studies were made. The ranges and averages as reported by him are:

Variables	Range of Correlation Coefficients	Average r
High-school marks with college marks	.29–.77	.54
Aptitude-test scores with college marks	.10–.63	.44
Multiple correlations	.58–.75	.62[3]

In the "Study of the Relations of Secondary and Higher Education in Pennsylvania" the school marks in eight semesters of English in 60 large high schools were compared with the scores in an English achievement test and with the scores in an intelligence test. The distributions of scores in the achievement and intelligence tests

[1] Scates, Douglas E. "A Study of High School and First Year University Grades," *School Review*, XXXII (March, 1924), pp. 182–92.

[2] Henmon, V. A. C., and Holt, F. O. *A Report on the Administration of Scholastic Aptitude Tests to 34,000 High School Seniors in Wisconsin in 1929 and 1930.* Madison, Wisconsin: University of Wisconsin, 1931. pp. 24–27, 57–60. (Bulletin of the University of Wisconsin, Serial No. 1786)

[3] *The Relation of High-School Preparation and Certain other Factors to Academic Success at the University of Oregon.* Eugene, Oregon: University of Oregon, 1931. pp. 12–21, 50. (University of Oregon Publication, Vol. III, No. 1)

were shown for students of each of the letter categories of the school marks. In one school, the average achievement-test score of those who received the school mark of *A* was at the 13th-percentile of the state-wide group. In another school the average achievement-test score of those who received the school mark of *D* was at the 96th-percentile of the state-wide group. In 7 per cent of the schools, those who had school marks of *B* made an average score in the achievement test equal to, or greater than, the average score of all of those in all schools who had school marks of *A*. In 20 per cent of the schools, those who had school marks of *C* made an average score in the achievement test above the average of all of those in all schools who had school marks of *B*.

The same chaotic relations were found in the comparison of school marks with intelligence scores. Seven per cent of those with school marks of *A* were found to be lower in tested intelligence than the average of those who had school marks of *B*. The average intelligence score of those who had school marks of *B* in one school was higher than that of those who had school marks of *A* in 75 per cent of the schools, and in one school the average of those who had school marks of *C* was higher than the average of the *A* students of all schools.[4]

WHAT is the significance of these variations in the selection of college entrants? Answering the question broadly, it can be said that the factor generally thought to be the most reliable index of success in college, namely, the average mark in high school, is subject to gross misinterpretation, for its meaning varies widely from school to school. Similar variations have been demonstrated in the meaning of school marks in school subjects, in terms of standard achievement tests and intelligence tests. The index is not improved when it is converted into a rank in class, for rank in class is not affected by the great variation from school to school of the scholastic aptitude as measured by the aptitude test which is almost as reliable as school marks as an index of success in college.

The range among schools of the correlation between school marks and scholastic aptitude, as measured by the test, emphasizes not only the general need of a check on school marks, but also the fact that the importance of such a check depends upon the school from which college entrants are being selected. Let us assume, for example, that the thing that is measured, to a degree at least, by school marks and the psychological examination is scholastic aptitude. It is obvious, therefore, that fewer common elements of scholastic aptitude are measured by the two instruments in the schools in which the correlation is low than in the schools in which the correlation is high. It follows that it is more important to use both instruments in the schools in which the correlation is low.

What is the solution of this complex problem? The writer is not in possession of the solution, but it is obvious that the use of a more stable index than school marks, or the application of some process of weighting school

[4] "Progress Report IV." Prepared for the Education Congress, Harrisburg, Pennsylvania, November 4–6, 1931. pp. 13–26.

marks with a more stable factor might improve the prognosis.

The colleges and secondary schools in several states are co-operating in state-wide testing of the high-school graduating classes. In these states it would not be difficult to determine the school medians each year and make them available to college admissions officers. These medians would serve the colleges as a loose college-aptitude rating of school populations. It has already been said that a variation of from 65.0 to 201.4 was discovered when this technique was applied to fifty schools in Chicago. Colleges would be justified in interpreting an average mark of 85, or a rank in the upper fourth of the class, differently in the schools on the two extremes of this range. If the school marks could be subjected to the further check of a school index of college aptitude, determined by a study of the college records of the graduates of the schools, it is probable that further refinement of prognosis could be secured. In other words, it would not be difficult, in a state-wide co-operative enterprise, to develop a composite rating of schools that would probably contribute much to the refinement of the process of selecting college entrants.

In the absence of a state-wide enterprise, the same results, in some degree, can be achieved by any single college by the use of an aptitude-test score as a check of the school marks in the case of every applicant, or, if it is more feasible, in the case of applicants whose eligibility is questionable. The latter procedure, to be successful, requires that the officer of admissions shall have a fairly accurate knowledge of the schools, for a student with an average mark of 90 or 95, or a rank in the upper tenth of his class, may be a poor college risk. To requote from the Wisconsin report, "The valedictorian in one graduating class may not reach the lower quartile point in scholastic aptitude in another graduating class."

Courses in Careers

By ROBERT HOPPOCK

The Vocational Guidance Courses Offered by Eighteen Colleges

THE choice of a career has long been recognized as one of the most difficult problems of the college student. There has been an equally long debate as to whether the college should attempt to help the student to make an intelligent choice; or whether by attacking this problem, the institution would become so "vocational" as to defeat its major purpose. The issue is not yet settled to everyone's satisfaction.

In the meantime, many colleges have decided to do something about it and are asking what to do. To help answer this question the Office of the Field Secretary of the National Vocational Guidance Association, with the assistance of the Student Volunteer Movement, recently compiled the catalogue descriptions of several courses designed to aid college students in choosing careers. Such courses have been found in all kinds of institutions from the junior college to the university and from the liberal-arts college to the professional school. In the hope that a recapitulation of these catalogue descriptions may be of interest and use to college administrators, eighteen of them are reproduced here.

AGRICULTURAL AND TECHNICAL COLLEGE OF NORTH CAROLINA

OCCUPATIONS 212—

This course aims to help the individual student find his place in the world of occupations. An effort is made to broaden the student's outlook before he becomes a part of the occupational world. A study is made of the various industries and occupations: government service; commercial occupations; earth occupations; transportation; banking, etc. The professions of law, medicine, teaching, social service, engineering, etc. Personal service and professions for entertainment, dressmaking, tailoring, hotels, and restaurants; musicians, artists, actors, etc. Special attention is given to the personal qualifications for the various occupations.

BLUFFTON COLLEGE (OHIO)

EDUCATION 1. GUIDANCE—

This course is required of all Freshmen. Beginning with Freshmen Week and meeting regularly during the first semester, its purpose is to orient these new students in college work and life as well as to bring them face to face with vocational choices.

CLARK UNIVERSITY [COLORED] (GEORGIA)

A3. SELF-ANALYSIS AND OCCUPATIONAL STUDY—

A course designed to aid the student in the analysis of himself and the discovery of his capacities and limitations; to help him make a critical study of a large number of vocations and compare his own qualities with the demands of these vocations and thus more adequately adjust himself to a vocation as a life work.

COE COLLEGE (IOWA)

EDUCATION 229. VOCATIONAL SURVEY FOR WOMEN—

Designed especially for Sophomores. A review of the leading vocations for women; the opportunities in each field and the qualifications and training necessary for each. Planned to aid girls in an intelligence choice of a vocation.

CORNELL COLLEGE (IOWA)

VOCATIONAL INFORMATION 1. VOCATIONAL SURVEY—

A survey of the occupational world in relation to the college-trained worker; the various occupations, their importance to society, the tasks involved, the economic conditions of employment; the education and training required, personal qualifications, advantages and disadvantages; special emphasis given to proper motivation.

CULVER-STOCKTON COLLEGE (MISSOURI)

17. OCCUPATIONS—

A survey of selected occupations and professions as to requirements, performance of duties, remuneration, supply, demand, advantages, disadvantages, etc.

GEORGIA STATE TEACHERS COLLEGE (GEORGIA)

EDUCATION 30C. VOCATIONAL GUIDANCE—

A survey of the occupations open especially to women. A consideration of their

requirements, opportunities, and possibilities of advancement.

GLENDALE COLLEGE (OHIO)

ECONOMICS D. VOCATIONAL PROBLEMS—

For guidance in selection of life work. Lectures and conferences.

HARTWICK COLLEGE (NEW YORK)

ORIENTATION 12. VOCATIONAL ORIENTATION—

A lecture course, aiming to acquaint the student with the world in which he lives, the great fields of knowledge, the vocations, their advantages and disadvantages, the need of workers in each field, the general and special training for each calling, the place of standards and standings, degrees and devotion, morals and religion, work and leisure, and the prospects of reward, etc. Students make outlines of the lectures which are examined by the teacher.

HASTINGS COLLEGE (NEBRASKA)

RELIGIOUS EDUCATION 7. CHOOSING A VOCATION—

This course aims to help students determine their life vocations. It will emphasize the principles underlying vocational guidance, not only from the point of view of a particular calling, but also from the point of view of continuous examination of one's own resources and purposes to see whether they are invested for the largest good.

HILLSDALE COLLEGE (MICHIGAN)

APPLIED CHRISTIAN EDUCATION 201. VOCATIONAL INFORMATION—

A course combining field and class work, designed to help students find out for themselves under sympathetic guidance the vocation for which they are best fitted. Particular attention will be placed the first semester on the study of the various occupations in which students are especially interested, with opportunities for as much actual practice as possible in these fields.

APPLIED CHRISTIANITY 202. ANALYSIS OF THE INDIVIDUAL—

Continuation of 201. Will deal more intensively with a study of the student's capacities necessary for various vocations, and the adjustment needed for choosing scientifically one's life work. Motive as an important factor in this process will be stressed.

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING

EDUCATION 103. OCCUPATIONS—

The purpose of this course is to give students a comprehensive view of the field of occupations, and to supply many of the facts which young men are entitled to have before finally deciding upon their life work. Students will be guided in diagnosing their own abilities and aptitudes and will have an opportunity of comparing their qualifications with those demanded by the various occupations, thus aiding students in making a more intelligent choice of a life career. The work will consist of readings, reports, discussions, and lectures by the instructors of the course and representatives of various occupations. Students will have opportunities of making studies of occupations in which they are most interested. In studying an occupation, such information as the following will be included: importance in society, kinds of work, advantages and disadvantages; how to prepare for it; qualifications essential and desirable; income; and general environment surrounding the work.

OBERLIN COLLEGE (OHIO)

VOCATIONAL INFORMATION 2. SELECTION OF A VOCATION—

The course . . . provides students with a technique for analyzing themselves and also makes available information concerning a number of occupations of interest to college students.

ROLLINS COLLEGE (FLORIDA)

ECONOMICS 302W. VOCATIONS—

The aims of life, the qualifications

required for success in any career, and the principal lines of professional and business work are considered in this course. Each student will choose for special study the career which he believes he will enter and will present its opportunities and problems to the class for general information and discussion.

SANTA ANA JUNIOR COLLEGE (CALIFORNIA)

VOCATIONAL INFORMATION 201. VOCATIONAL LECTURES—

Designed to give the student first-hand information regarding the functions, needed qualities, opportunities, and particular advantages and disadvantages of several major occupations generally open to college-trained men and women. Business or professional men and women are invited to speak to the class.

TENNESSEE WESLEYAN COLLEGE

ORIENTATION 202—

This is a seminar course designed to give the members of the senior class of both the college and the preparatory departments some educational and vocational guidance. An effort is made to help each student to reach a decision as to the line of work which he is best fitted to pursue and to guide him in his plans for further preparation for this work.

UNION UNIVERSITY (TENNESSEE)

VOCATIONAL EDUCATION 24. VOCATIONAL GUIDANCE OR HOW TO CHOOSE A CAREER—

. . . aids the students in taking their own measure physically, mentally, and spiritually, in analyzing their own talents, capabilities, desires, in analyzing the requirements of the various vocations and thus enabling them to choose intelligently among them.

UNIVERSITY OF PITTSBURGH (PENNSYLVANIA)

BUSINESS CONFERENCE I—

A general survey of business and of occupational opportunities for the graduate; conferences with representative men from business and industry. A year course required of Seniors.

Background Deficiencies

By W. S. GUILER

College Freshmen Handicapped by Lack of Proficiency in the Three R's

THE low level of ability exhibited by many college Freshmen in the fundamental tools of learning constitutes one of the major problems of college administration. As evidence of the seriousness of the problem, witness the large number of college entrants who have never acquired such fundamental adaptations as ability to read rapidly and with understanding, to manage number concepts in their mathematical relationships, and to use clear, accurate, and cogent English.

In a survey made at Miami University more than half of a group of 437 college Freshmen (55 per cent) were below the standard for high-school Seniors, when measured by the Shank reading test; one-third could not read as well as the average pupil in the first year of the senior high school; and one-fifth were unable to read as well as the average pupil in the last year of the junior high school.

They showed a somewhat better mastery of background essentials in English fundamentals, but practically two in every five were below the standard for high-school Seniors, and one in every five was below the standard for pupils in the beginning year of the senior high school. In computational arithmetic 48 per cent fell below the standard for high-school Seniors; 45 per cent did not attain the standard for the first year of the junior high school; and 19 per cent did not reach the standard for the sixth grade, which represents the last year of the elementary school.

A diagnosis of the specific shortcomings of college Freshmen shows a surprising lack of mastery in many specific abilities which are foundational to educational progress and which presumably had been mastered on earlier educational levels. An analysis of the test papers of the 1,063 college Freshmen who took the Guiler-Christofferson Diagnostic Survey Test in Computational Arithmetic showed a widespread lack of proficiency in ordinary computation dealing with whole numbers, fractions, decimals, practical measurements, and percentage, although the examples represent types that are frequently encountered in life situations. The percentage of misses on the twenty-five types ranged from 4 in an example which required merely the placing of the decimal point in the following product: $7.06 \times 2.7 = 19062$ to 78 in an example directing that the student copy and divide: 11 bu. 2 pk.

by 4. Thirty-eight per cent were unable to multiply a four-place by a two-place number (4608×89), 52 per cent were unable to divide a five-place by a two-place number (67092÷86), and 54 per cent were unable to subtract simple mixed numbers (185744 −95849).

Measurement of achievement in reading revealed a serious lack of ability on the part of a large number of college Freshmen to use reading as a tool of learning. An analysis of the test papers of the 437 Freshmen who took the Shank reading test yielded the following results: in ability to read for whole meaning, 25 per cent fell below the ninth-grade standard and 4 per cent fell below the seventh-grade standard; to read for direct details, 26 per cent fell below the ninth-grade standard and 3 per cent fell below the seventh-grade standard; to read to determine the object, words, or thoughts to which given words, for example, "it," "they," "them," refer, 30 per cent fell below the ninth-grade standard and 5 per cent fell below the seventh-grade standard; and, in ability to read for word meanings, 21 per cent fell below the ninth-grade standard and 8 per cent fell below the seventh-grade standard.

Measurement of achievement in spelling revealed the fact that a considerable proportion of college Freshmen were unable to spell many of the words frequently found in written discourse. Of the 350 Freshmen tested, 10 per cent missed "except"; 15 per cent missed "ample"; 20 per cent, "principal"; 25 per cent, "materially"; 30 per cent, "ninety"; 35 per cent, "grateful"; 40 per cent, "calendar"; 45 per cent, "privilege"; and 60 per cent, "accommodate."

The lack of ability manifested by college Freshmen in applying certain principles of grammatical usage is indicated by the error quotients which follow. The computations are based on the errors found in the test papers of 625 students who took the Guiler-Henry Preliminary Diagnostic Test in Grammatical Usage. In computing the error quotient for a given usage, the number of errors made in the usage was divided by the number of opportunities which the test provided for making errors in that usage. The grammatical usages with their error quotients were:

	Error Quotients
1. The verb of a sentence must agree with its subject and not with its predicate noun	.10
2. A pronoun must agree in number with its antecedent	.12
3. A verb agrees in number with its subject in spite of the number of the nouns which intervene	.24
4. A compound subject made up of two singular nouns joined by "or" or "nor" is followed by a singular verb	.33
5. Pronouns referring to "each," "every," "either," and "neither" must be singular	.35
6. An infinitive phrase must clearly attach itself to the noun or pronoun which it modifies	.39
7. The tense of the verb in the principal clause governs the tense of the verb in the subordinate clause	.46
8. A collective noun is singular when considered as a whole, and plural when its parts are thought of separately	.56
9. A gerund phrase must clearly attach itself to the noun or pronoun which it modifies	.59
10. A pronoun must have only one antecedent to which it might refer	.81

A study of the learning difficulties encountered by college Freshmen leads to the conviction that these difficulties are individual and specific. This conviction is well substantiated by an analysis of the results of tests. Thus, an examination of 260 test papers shows that in attempting to divide in an example involving simple mixed numbers ($7\frac{1}{2} \div 2\frac{1}{3}$), 18 college entrants made errors in computing with whole numbers, 14 made mistakes in changing to a mixed number, 12 used the wrong operation, 9 made errors in changing to improper fractions, 6 encountered difficulty in reducing to lowest terms, 5 did not complete the example, 4 failed to invert the divisor, 4 made errors in attempting to change to decimals before dividing, and 2 inverted the dividend.

Additional evidence of the specific nature of learning difficulties is found in the misspellings of college Freshmen. An examination of the results of a fifty-word spelling test which was given to 350 students shows that different students encounter difficulty at different points in their attempt to spell a word. Thus, the letter *t* constituted the critical point in the word "mortgage" for 83 per cent of the 109 students who misspelled it, while the letter *g* constituted the critical point for the remaining 17 per cent.

CERTAIN colleges have made serious attempts to overcome background deficiencies of Freshmen. Some have organized classes for this purpose and have employed group instruction; others have attempted to administer remedial work on an individual basis. At Miami University remedial instruction is undertaken on an individual basis in certain phases of English and mathematics. The fields of learning in which background training is undertaken are blocked off in learning units such as sentence structure, spelling, and grammar in English; and fractions, decimals, and percentage in mathematics.

Three steps of procedure govern the administration of each unit: preliminary testing, individualized remedial instruction, and retesting. The preliminary testing consists first in making a survey to discover the students who are weak in the unit of learning, and second in diagnosis of individual weaknesses. The function of the remedial instruction is to overcome individual deficiencies. The retesting serves a twofold purpose: to obtain an objective measure of improvement and to identify deficiencies of students who have not mastered the unit.

After the weak students in any learning unit are discovered and their weaknesses are identified, they are provided with copies of an individu-

TABLE I

INITIAL AND FINAL SCORES OF COLLEGE FRESHMEN IN FIVE UNITS IN WHICH INDIVIDUALIZED REMEDIAL INSTRUCTION WAS GIVEN

Remedial Units	Number of Students	Highest Possible Score	Average Score on Initial Test	Average Score on Final Test
(1)	(2)	(3)	(4)	(5)
Spelling	180	50	36.1	48.0
Capitalization	137	129	97.3	123.3
Punctuation	120	120	82.1	112.7
Sentence structure	135	26	9.9	23.0
Grammatical usage	116	97	25.2	71.3

alized *Remedial Workbook*, the content of which is organized in such a way that each student secures self-teaching and abundant practice on the items which give him difficulty. The improvement resulting from individualized remedial instruction in five learning units in which many college Freshmen were deficient is given in Table I. A brief inspection of the table shows that marked improvement was made in each unit.

TABLE II

SCORES RESULTING FROM INITIAL TESTS AND EQUIVALENT FORMS GIVEN ONE AND A HALF YEARS LATER TO THE SAME STUDENTS

REMEDIAL UNITS	NON-REMEDIAL STUDENTS			REMEDIAL STUDENTS			
	Number of Students	Average on Initial Test	Average One and a Half Years Later	Number of Students	Average on Initial Test	Average on Final Test	Average Score One and a Half Years Later
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Spelling	50	46.4	47.2	49	38.9	48.4	46.2
Capitalization	56	111.0	113.7	42	97.5	123.3	112.0
Punctuation	61	100.9	105.6	36	85.0	112.2	105.3
Sentence structure	62	19.4	22.3	33	10.1	22.5	20.3
Grammatical usage	42	54.8	68.9	45	27.5	81.6	66.6

A QUESTION which often arises in connection with the administration of remedial instruction is concerned with the permanency of the learning product, Does the learning "stick"? In an attempt to gather some evidence on this point, the same students who had taken the initial tests in five learning units were given tests approximately one and a half years later. The retests were the equivalents of the initial tests in content and in difficulty. The results are given in Table II. Analysis of the tabular data shows that although considerable "backsliding" characterized the learning of the remedial students, the permanency of the learning was such as to make a clear case for remedial instruction as a means of overcoming background deficiencies.

To Unify the Liberal-Arts Curriculum

By HARVEY A. WOOSTER

The Principle of Evolution as a Unifying Concept for the College Curriculum

CURRICULUM reform has been under way for so long in the liberal-arts colleges that it is possible now to examine the results with some degree of hopefulness, though it is not yet possible to appraise their value. One fact must strike the careful observer at once: there seems to be no agreement among the students of liberal-arts education as to the fundamental principle or principles upon which a college curriculum ought to be built. Numerous experiments are being tried, but the whole body of experimentation bears an uncomfortable similarity to rule-of-thumb methods long ago abandoned by careful scientists. The difficulty seems to be that there has been no recognized integrating concept upon which to base experiments.

The liberal-arts college once possessed such a concept in the older idea of culture. The older college was a distinctly classical institution. Destined for the most part for the professions, its students expected to enjoy a certain degree of leisure and a favored cultural status. Culture meant philosophy, the classics, and the humanities in general, the spirit of detachment from affairs of the present and of contemplation of the values of the past. The older college thus found its guiding principle in the elements of the culture of detachment, as conveyed through the learning of the past.

It was possible in a college of this type to present a unified curriculum. Unification indeed took care of itself. Content, purpose, and method were in more or less complete harmony; this is no longer true. During the last half or two-thirds of a century the curriculum has absorbed so many new departments and courses, with conflicting aims and points of view, that the old unity has wholly disappeared. The content of the new far exceeds in quantity that of the old. Yet the college has attempted, until within the last decade, to maintain its traditional outlook, and the older members of its faculty still lament the fundamental change in spirit which not even they can deny. If liberal-arts education is to be reintegrated, more will be required of the college than merely a change in curriculum, but curricular changes aimed directly at the need for reintegration should accomplish much and are a *sine qua non* to that end.

The beginning of the present difficulties dates back to the coming of modern natural science, reinforced in later years by modern language and social science. An approach to the problem with this in mind will suggest the way out, so far as the curriculum is concerned. The older learning revered and paid homage to the past. Science not only gave it no homage, but manifested little reverence as well, questioning its conclusions at every possible point. The older learning was essentially authoritarian in spirit; science was pragmatic. Science was young and earnest. Many of its devotees had little use for leisure and less for culture in the then prevailing sense. They dreamed of new worlds to struggle for and a learning different from the old in both spirit and method. They fought the old with all the zeal of the young and the new, aided in later years by the social scientists. Meanwhile, the proponents of modern language and literature launched their attack upon the exclusiveness of the classical tradition. Beneath these three assaults the older learning gave way until the liberal-arts college became no longer dominantly classical in spirit or in outlook, but primarily scientific and modern.

So long as it could, the older learning with prerogatives in the control of the colleges ignored this fact. This generation is witnessing the final surrender of the old guard, the culmination of a hard-fought and bitter retreat, leaving the victors uncertain themselves which way to turn. They have abandoned the older guiding principle without having gained a new one, or rather without being aware that they have acquired one. In consequence, curriculum committees, administrative officers, and faculty members have struggled with their problems more or less in the dark. Through all the changes the older content still persists. Indeed, it seems clear that the old is needed along with the new. What we have done, consciously or unconsciously, is to shift the emphasis from the old to the newer subjects, with their different aims and spirit, while continuing to think of the college in terms of the older point of view.

TRANSITIONS are always costly. Old controls give way; new ones are slow to establish themselves; and education drifts in consequence. We need, and need desperately, some controlling, articulating concept or principle upon which our modern disjointed, more or less haphazard, over-departmentalized higher education can be again organized into an orderly process with more semblance of unity and continuity than it now displays. Is there such a principle? If so, it should be broad enough to embrace both the old and the new and vital enough to give organic coherence to the entire curricular structure.

A clue may be found in two trends easily discernible in both the thought of our time and the curriculums of our colleges and universities. One of these is the tendency to approach all questions, so far as possible, with the method and spirit of science, with understanding rather than "culture," the active life rather than detachment, as the goal. The other is a bias toward present-mindedness as distinct from

the past-minded outlook of classical thinking. Under the influence of these trends, the college curriculum has become dominantly scientific in content, tone, and outlook, and it has begun to concern itself increasingly with problems of modern life, not pretending however that all learning is science, nor all education exclusively learning in the narrowest sense, nor that the present dominates all other periods.

The fundamental thing that has happened is not difficult to recognize. The general acceptance of a great scientific concept has bent our thinking into scientific lines and has at the same time supplied the necessary bond for integrating the present with both the past and the future. That concept is the principle of continuous, if not always progressive, evolution. No other product of the mind of man has ever taken such hold upon his thinking as this. It has come to be basic, not only to all science, both natural and social, but to philosophy, ethics, religion, and history, as well, including the special histories of literature, education, and religion. Its time-binding, vitalizing influence is not wholly absent even from the fields of the fine arts. If we desire to develop in our students a sense of the unity of all knowledge, all time, all forms, the beginnings, at least, of an understanding of the dynamic in all the processes of life upon our planet, and a vision of the future toward which they tend, this is the thread that should run through all our teaching. The student who has really grasped this concept carries it with him everywhere, no matter what his course through our curricular labyrinth. Is it not plain that this is the unifying, organizing, articulating concept for which we have been groping in our reorganization? It makes the past live in the present. It challenges the present to control the future.

IF WE accept it in this rôle and apply ourselves to curricular problems with the intent to make it function, we shall be struck at once by one outstanding but familiar circumstance: it is all but impossible, without major alterations in our customary scheme of departmentalized courses, to integrate the educational experience of any single student or group of students. Those of unusual ability may succeed in integrating their own learning process in spite of it, but for the bulk, even of good students, the task is too difficult. The concept of evolution appears at many points in every respectable curriculum at present. It does not produce the desired result partly because there are so many separate departmental fences erected across the fields of learning that the result actually attained is not the integration but the disintegration of learning.

The weakness of the present departmental system, with its emphasis upon specialized subjects rather than the needs of students for integrated education, has been widely discussed. In the graduate university emphasis upon subject-matter and subdivided specialization must presumably continue to dominate. The organization of the undergraduate curriculum to parallel that of the graduate university has been ruinous to the undergraduate learning process. The education it provides does not endure, or endures in fragments only, in the minds of

most of those who have been its beneficiaries. In the lives of too many of the college students of America most of its actual influence apparently dies the day they leave the campus; indeed, it is already dead the day the lecture notes of last semester are consigned to the wastebasket and last year's textbooks sold to the next contingent of recruits. It is so completely dead among those five years out of college that a large proportion of the alumni of most of our liberal institutions would rather see the college bereft of library income and the finest teachers on its faculty than lose an outstandingly successful football coach. If the undergraduate learning process is to be articulated and integrated the ideal of specialization that produced the present departmental system must be qualified by the introduction—the reintroduction in realty—of the principle of integration as between subjects and departments. Again we turn to the concept of evolution as an organizing factor.

THE application of this concept in the light of the principle of integration will lead at once to two conclusions. First, only a realignment of course groups in fewer departments can make possible an effective unification of our educative efforts in terms of the individual student's achievement; mere orientation courses will not do it. Second, greater continuity in the presentation of subjects will be necessary, a continuity that far surpasses any we have yet attempted.

How the first of these may be accomplished is indicated in the following tabular diagram in which the curriculum as the story of mankind is divided into eight departments:[1]

1. On a tiny planet in a universe of suns, where the ceaseless and unvarying forces of nature produce an unending process of continuous change.	*Astronomy* *Geology*
2. Man evolved from lower forms of life.	*Botany*, *Zoölogy*, *Ecology*
3. Man is a vertebrate mammal, with a highly complex nervous organization.	*Physiology* *Psychology*
4. He is affected by all the fundamental forces of nature, which he seeks to understand and to bend to his will.	*Chemistry* *Physics*
5. Living in the society of other men, he tries to understand group life, to adapt himself to it, and to mold it to his needs.	*Anthropology*, *Ethnology*, *Sociology*, *History*, *Economics*, *Political Science*, *Social Ethics*
6. He strives to integrate his knowledge, and to see beyond the forces of nature, to ask the question, "Why?"	*Philosophy* *Religion*
7. He learns to appreciate the beautiful, and, so far as he can, to create it.	*Fine Arts* *Music*
8. He learns also to enjoy vicariously the thoughts and experiences of others and, when he can, to pass on to them for their pleasure and inspiration the fruits of his own experience and thought.	*Literature*, *Ancient and Modern*

[1] A proposal to reorganize the curriculum upon the basis of the concept of evolution as an organizing principle, with the tabular form given here, was presented to the College Committee on Curriculum, of Oberlin College, during 1929–30. The underlying idea and a modified tabular statement were adopted by this committee and by the faculty of Oberlin as a

A discussion of the second will appear in later paragraphs, although the table itself suggests both functional groupings of commonly existing departments and an order of presentation such as to bring the unifying principle into functioning at the earliest possible point and with a maximum of developmental force. The eight curricular departments represent a grouping of related subject departments that ought, for purposes of integration, to work out their courses together. Each of these large departments should, of course, relate its work to that of the groups immediately preceding and following.

A word of explanation is in order concerning one aspect of the curricular plan suggested by the table. The proposed curriculum is frankly anthropocentric. Education long ago gave up the theocentrism of the medieval Church. It is time to divest it of the too exclusively cosmogonistic slant which natural science introduced as its substitute. Man and the universe are both important to man, but the greater of these in modern education is man; not man as a special creation, as the Church saw him, not man as the essence of creation, but man as one of Nature's children, the arbiter of his own destiny under her laws and the creator of a new and better world.

Present-day education stresses this aspect of man and must do so if human progress is to be made in any important direction. With this in mind our education, and hence our curriculum, becomes the "story of mankind" on a grand scale, to which every branch of learning adds its contribution. It is not always concerned immediately with man, as, for example, when it pictures the galaxies of stars and universes whose light is older than man and may outlive him. But it tells us at the same time that man is a partner in the elements with the stars, governed by the same immutable nature that guides their movements. In an evolutionary curriculum man becomes a product of evolutionary forces, one of many characters in the great drama of ceaseless change, a modifier of the consequences of natural law, and a subject of evolutionary change himself.

Some further comments upon the table may help to answer questions that are likely to arise concerning it. The table does not display a complete curriculum. Its most important omission is that of "tool" courses such as mathematics, English composition, and foreign languages, as distinct from literature, ancient and modern. There is no intention that these shall be omitted from the curriculum actually offered. What is implied is that the major function of these courses, without denying to them other values also, is that of tools for the mastering of these subjects, mathematics for the sciences, for example, and language courses as an introduction to the

background for the revision of the curriculum then under way at that institution. The arrangement of courses proposed was not adopted, nor was any attempt made to reorganize departments, as here suggested. The modified forms of curricular structure finally effected at Oberlin combined brackets 1 and 4 and also brackets 7 and 8, as given in this table, and introduced an additional bracket to include mathematics, language, and logic as "tool" courses, making seven sections instead of eight. The Oberlin adaptation also transferred physiology from Bracket 3 to Bracket 2, leaving psychology in a bracket by itself, and introduced other minor changes, including some re-wording of the running statement in the left-hand column. (*See* "Announcement of Courses, 1932–33, College of Arts and Sciences," *Bulletin of Oberlin College*, p. 30. New Series No. 288.)

literature of other peoples and other cultures. Similarly, certain border-line courses such as geography and hygiene are omitted from the table.

The subjects mentioned in the right-hand column do not include all that might be included, nor are all those mentioned necessarily to be made a part of every college curriculum. Many colleges cannot provide for courses in ecology or ethnology, for instance. The listing in this column is that of subjects rather than departments although in most of the better colleges separate departments have been organized for most of the fields mentioned with the exception of the large group in the fifth bracket.

THE arrangement of subjects in the table is not intended to imply the absolute necessity for a continuous and exclusive order of presentation of subjects in the exact succession in which they appear in its columns. There is behind it, however, the tacit assumption that, during the first two years of the college course, when the student's time will be given up largely to tool courses, a start will be made through the avenue of the sciences to present and amplify the concept of evolution. If such a start can be made through chemistry and physics as now commonly taught, which seems to the writer doubtful, these subjects, or one of them, might be started in the freshman year.

An ideal approach would probably begin with a freshman integration course especially constructed for the purpose co-operatively by skillful teachers in sympathy with the plan. This course would tell the story of the first two brackets in the table. It would run through the year, meeting three or four times a week in a normal two-semester year, and would be so arranged as to avoid sharp departmental distinctions and yet cover its field. Its primary emphasis would be placed upon the functioning of natural processes and the dynamic nature of the entire physical and biological world. It would attempt also to develop in the student something of the feeling of the scientific spirit and to cultivate appreciation of the scientific point of view. Bracket 2 might appear during the second semester of such a course as a properly constructed course in organic evolution running into the beginning of the material suggested in brackets 3 and 5.

The story would be continued during the sophomore year with Bracket 3 and perhaps the first two subjects in Bracket 5, carrying the story of evolution into the physical and social life of man, while students with scientific interest would presumably elect in addition chemistry or physics in this year or perhaps a laboratory course in bracket 1 or 2. Somewhere in the integration courses provision should be made for laboratory experience unless a laboratory course of the usual type is required in addition to these courses, for surely in these days no man is truly educated in the fullest sense who is without experience in scientific method. History should be introduced as early as possible and elections made in economics, sociology, or political science not later than the junior year.

Bracket 6 belongs to the junior and senior years. The need here might be

met by the usual courses in the history of philosophy and perhaps a survey of the religions of the world. Here, again, the dynamic elements of change appear, even in religion; and variation, adaptation, and selective survival may be seen at work very much as in the natural world.

Brackets 7 and 8 may be filled in throughout the course as the student's interests, ability, previous training, and general program indicate to be desirable. These subjects are touched least by our dynamic principle although courses in the appreciation of art or music cannot fail to bring out the element of adaptation and survival of forms and types and the constant process of variation. Similarly, literature shows no fixity of form or character. It is not contended that literature, the fine arts, and music should be taught as if these were the main values they contribute. It is recognized fully that in these fields the major values are of quite another sort. It is suggested merely that, in a program integrated upon a dynamic base, even these subjects are illuminated to a degree by reference to the principle of orderly dynamic change.

A QUESTION sure to arise in connection with such a plan of organization, as is here proposed, concerns the amount of required work compared with free electives that would make up the individual student's program. It is assumed that each student will be brought into contact with every group of subjects in one way or another, not, the reader will note, with every subject, but with each group. To illustrate, the integration courses proposed to run through brackets 1 and 2 of the table may be considered a sufficient requirement within these groups. One year course, or its equivalent, in any one of the social sciences might be held to be adequate as a requirement in Bracket 5. Or, if a special orientation course is given in this group, as in some institutions, this might be offered as a minimum requirement. It should be noted, however, that, with the exception of anthropology, ethnology, and history, the subjects in this group are considered from the standpoint of this plan as "end-products," courses of the present world and the present time, rather than parts of the evolutionary scheme of presentation. As such, they would of course lean heavily at many points upon the earlier integration courses.

There is, or may be, an important distinction between orientation and integration courses. In the social sciences, the former may consist of an introduction to the various departmentalized fields, part being given to economics, for example, part to sociology, and part to political science. Such a course may orient the student within the fields covered, but it will not integrate his work in them with the rest of his course of study, or will do so only poorly. An integration course, properly conceived, disregards departments to maintain the continuity of a story begun earlier and carried further later. It is not the story of departments, but of man and the life problems he has to face, the problems being taken as a whole as they arise in the course of the story, all phases together.

Finally, it will be noted, the table

provides no place for preprofessional training courses such as are provided by departments of education and business administration, or for intensive concentration in any one field. A rather careful synthesis, or series of syntheses, of the material in the table indicates that the table and the necessary "tool" courses can be covered surprisingly well by the normal student in three years. This means, in terms of a four-year course, that all preprofessional work, all intensive major courses susceptible of postponement until the fourth year should be put into that year, which can be made a period of concentration unequaled by the senior year of the usual present curriculum. To the extent that courses of this type cannot be postponed so long, portions of the tabulated work can be carried into the senior year as they are at present to leave time for preprofessional or major courses that must be elected in earlier years. Concentration during this period would be hampered somewhat by such procedure but not to the extent that usually prevails in the present type of program.

· *With the* · Technicians ·

Suggested Forms

Periodical or monthly reports of the finances of a college and university prepared for the information of the governing board, the president, the deans, and the financial officer are described in the current bulletin of the National Committee on Standard Reports for Institutions of Higher Education. The forms proposed in this pamphlet, entitled *Suggested Forms for Internal Financial Reports of Colleges and Universities* are supplementary to and in harmony with the recommendations made in last year's bulletin, *Suggested Forms for Financial Reports of Colleges and Universities*. "The annual published report is important because it presents . . . statements setting forth the financial condition of the institution, [but] of even greater importance . . . are the internal monthly or periodical financial reports, for . . . without such informative reports, the finances of the institution cannot be efficiently administered."

The task assigned the committee was to obtain uniformity in reporting, and in the present bulletin it has been necessary to prepare schedules which may be used in whole or in part by large and small institutions, the plan being adaptable to both. Only the largest institutions will need to use all the schedules set forth in this report; the small college and university will need to use but few of the schedules; and a particular institution may need to add to its monthly report schedules which are not prepared here.

Since internal accounts and reports should be based upon the budget, the arrangement of the internal reports suggested in this bulletin harmonize with the budget suggested in the earlier bulletin. The proposed form of each monthly financial report is so arranged that the actual figure of income and expenses may be compared with the corresponding budgetary estimates.

The 32 schedules suggested for the internal frequent report are: Balance Sheet (1), Cash Summary (1a), Statement of Unappropriated Income (2), Statement of Unrealized Income (3), Statements of Appropriations (4 to 29, inclusive), Statement of Restricted Funds (30), Statement of Unexpended Plant Funds (31), Statement of Stores and Work in Process (32). The purpose of each schedule is defined, and the entries to be included in each are enumerated with illustrative figures in Section II.

The reader will recall that the National Committee on Standard Reports for Institutions of Higher Education was organized in 1930 at the suggestion of the United States Office of Education.[1] Its work is financed by the General Education Board. Its membership consists of representatives from the Association of University and College Business Officers of

[1] "With the Technicians," JOURNAL OF HIGHER EDUCATION, III (February, 1932), pp. 97–98.

the Eastern States, the Southern Educational Buyers and Business Officers Association, the Association of University and College Business Officers, the Association of American Colleges and the Council of Church Boards of Education, the Business Officers of Pacific Coast Universities and Colleges, and the American Association of Collegiate Registrars. Comptroller Morey, of the University of Illinois, is chairman of the Committee.

Class-Size Again

Many teachers prefer to teach small classes, and administrative opinion generally contends that small classes are more advantageous to the student. With discouraging persistency, however, the numerous studies of size of class have returned unconvincing results in favor of the large group. To a lay reader there has been a monotonous similarity in the techniques employed in these studies, as well as in the results obtained.

In the extensive studies at the University of Minnesota, however, one variation appeared, an attempt to adapt procedures to the large classes was reported by Miss Smith. This variation had been urged by previous investigators in their conclusions and advice to others; no one of them had attempted it himself.

In a recent class-size study made at Iowa State Teachers College a further trial of the methods of instruction was attempted.[2] Three typical groups of students registered in beginning psychology were arranged: large experimental (60 students), small experimental (30 students), and control (30 students). No attempt was made to pair individual members of the groups, but transfers were made until the average and standard deviation for the two experimental groups were similar. Several instructors took part in the investigation. The new techniques, involving daily study units, small "squad" discussion, the use of special motivation, class discussion of difficult points, and individual reports, were used. The experimental groups were taught by this procedure, while the control groups were taught by the instructor's usual methods. In every case the large experimental group excelled the corresponding control group and the small experimental group, but the advantage was not large. Mr. Brown interprets this advantage simply as favoring the technique.

The report of a second study, introducing in its title such variables as learning, effort, and attitudes, also concerned with class-size, was made at Purdue University and was participated in by two instructors teaching beginning engineering mathematics and by 210 Freshmen.[3] The first conclusion has a familiar sound, "Size of class . . . is not a significant variable in the achievement of students."

The students' attitudes were unanimously favorable to small classes, and as measured by their ratings of the professors their attitudes were not

[2] Brown, Albert Ernest. *The Effectiveness of Large Classes at the College Level: An Experimental Study Involving the Size Variable and Size-Procedure Variable.* Iowa City, Iowa: University of Iowa, 1932. 65 pp. (University of Iowa Studies in Education, New Series No. 232)

[3] Remmers, H. H.; Hadley, Laurence; and Long, J. K. *Learning, Effort, and Attitudes as Affected by Class Size in Beginning College Engineering Mathematics.* Lafayette, Indiana: Purdue University, 1932. 32 pp. (Bulletin of Purdue University, Studies in Higher Education XIX)

greatly affected by the size of the class. The students in large classes (43 to 54 students) tended to spend slightly more time in preparation than did the students in the small classes (19 to 27 students).

Although these two studies have varied the monotony of the usual class-size report, they, too, have depended for final judgment on tests of information. In editing a monograph recently the writer found a short account of a trial experiment in zoölogy at Ohio State University which added other new features to the prevailing techniques of class-size studies. Objective examinations constructed to test the student's ability to apply principles of zoölogy to problems new to him, his ability to interpret experiments new to him, and his ability to plan a controlled experiment, as well as his memory of zoölogical information, were used in this investigation. A professor of acknowledged skill taught the large class (99 students) and the small class (33 students), using variations in instructional techniques. The students of the large class were provided "one-hour lectures or demonstrations three days each week and two two-hour individual laboratory periods each week. . . . In the small class, demonstrations, discussions, and individual laboratory work guided by discussions represented the teaching procedure. The small class met one hour each day, five days in the week, so that the actual time spent in class and laboratory was two hours less per week in the small class." Twenty-five students from the large class were paired with 25 students of the small class, allowing not more than a 2-point variation between the two members of a pair in intelligence percentiles and in scores on the pre-test in zoölogy. The author's summary will tell the story:

> The 25 students in the small class made a higher average achievement on the examinations than the corresponding 25 students in the large class. The difference in favor of the small class was four times its probable error so that it is highly significant statistically. In 17 of the 25 pairs the students in the small class made higher scores than those in the large class, in 4 pairs the students in the small class made the same scores as those in the large class, while in only 4 pairs did the students in the large class make higher scores. When the average examination score for the entire 99 is compared with the average for the 33 the difference in favor of the small class is even larger. Confirming the Minnesota report students in the large class did as well in the recall of information as those in the small class, but on every other part of the examination the achievement of the small class was higher.[4]

Co-ordination in Oregon

Oregon has just finished the task of gathering together her six separate and more or less competing institutions of higher learning, placed them under a single management, and has started them off as six units of a single co-ordinated and unified Oregon State System of Higher Education. Under the new plan the state university at Eugene, the state college at Corvallis, the Oregon Medical School at Portland, and the three normal schools at

[4] Tyler, Ralph W., and others. *Service Studies in Higher Education.* Columbus, Ohio: Ohio State University, 1932. pp. 117–19. (Bureau of Educational Research Monograph, No. 15)

Monmouth, Ashland, and La Grande are all units of the one system under the control of a single state board of higher education and administered by a single chancellor. Each unit still retains its individuality and is presided over by a president, dean, or director.

The basic unit under the new plan, however, is curricular rather than geographical. Each field of instruction is organized into a school; all instruction in this field offered in the system is included under the supervision and direction of a single dean. These schools are the fiscal as well as the administrative units, budgets being built on the basis of the school rather than on the campus location.

These changes are the result of the recommendations made by the Survey Commission of Oregon Higher Education under the direction of Mr. Klein, formerly chief of the Division of Collegiate and Professional Education of the United States Office of Education.[5] The report of this commission was received in Oregon, April 3, 1931, and it recommended such fundamental and far-reaching changes in organization that the state board was confronted with the gigantic and impossible task of trying to set up an acceptable program by the start of the new fiscal year for the colleges on July 1. The attempt to effect this reorganization in such a short time was finally abandoned, and the institutions continued with their existing organizations for another year.

One feature of the Commission's report that immediately drew wide comment and controversy was the recommendation to centralize all upper-division and graduate work in the biological and physical sciences on the Corvallis campus and all similar work in the humanities and social sciences at Eugene. The Commission included in this last grouping all upper-division work in commerce and business administration at that time located on both campuses. Under the proposed Oregon plan the new arrangement must be considered as one university on two campuses forty miles apart.

Unspecialized freshman and sophomore work is now offered on essentially the same basis at both Eugene and Corvallis, under the supervision of a director of lower division. The object is to provide the broad foundations of a general education such as is needed by men and women regardless of the careers they may follow. This lower-division curriculum sets up certain group requirements in the four general fields of physical, biological, and social sciences, and the field of literature, languages, and art. Students following this general course for the first two years are qualified to enter many of the upper-division schools, and by directing their course to a certain extent may meet most of the requirements for some of the technical and professional schools. An entering student who has already decided on his major work is advised to register as a Freshman on the campus where such major work is offered, and provision is made for his securing the general lower-division work before he becomes a candidate for a degree.

In the division of major curriculums the schools of agriculture, engi-

[5] Klein, Arthur J. *Survey of Public Higher Education in Oregon.* Washington: Superintendent of Documents.

neering and mechanic arts, forestry, home economics, pharmacy, and science are located at Corvallis. The schools of business administration, fine arts, journalism, law, arts and letters, physical education, and social sciences are located at Eugene. Medicine is continued at Portland, and the school of education is divided almost equally between the Eugene and Corvallis campuses with degrees offered at both places.

Preparation for teaching in high school is centered at Eugene and Corvallis under one director of high-school teacher training and dean of education with each institution preparing teachers only in its recognized specialties and approved combinations. The elementary teacher training is distributed at the three normal schools and headed and co-ordinated by one director of elementary teacher training, who also serves as president of the Oregon Normal School at Monmouth.

A single catalogue for the entire Oregon System of Higher Education will present the courses for all the schools. Interinstitutional divisions which will be administered through the office of the executive secretary are: business office, publications and information, registration and records, and buildings and grounds. The plan also calls for consolidation of the student-welfare activities under one director—deans of men and women, personnel and guidance activities, student health and housing.

A series of articles relating to the creation and elevation of standards in professions is found in the *Educational Record* for July. Ray Lyman Wilbur emphasizes the parts played by the Council on Medical Education and Hospitals of the American Medical Association, through its ratings, and the Association of American Medical Colleges, which has raised standards through its policy of admitting only schools satisfying high and rigid requirements.

James Grafton Rogers discusses the influence of state bar associations, the American Bar Association, and its Council on Legal Education and Admissions to the Bar. "The influence of the apprentice tradition has, as might be expected, been chiefly to emphasize the desirability of the student being thoroughly drilled in the technical methods and mode of practice." Many of the lowest grade schools have been eliminated through the publication of standards and approved lists by the American Bar Association. Low schools now principally divide themselves into universities and commercial night schools.

The part played by the Society for the Promotion of Engineering Education, while not the first of the professional engineering bodies, is stressed by Mr. Wickenden. Another influence not possible to be overestimated is that of the study of engineering education made by the Carnegie Foundation for the Advancement of Teaching. The Society for the Promotion of Engineering Education has not been like its other professional contemporaries in that it has done no accrediting or definition of standards. Mr. Wickenden advocates certification for the profession.

·The·Reporter·

THE National Committee on Standard Reports for Institutions of Higher Education has just published two bulletins of interest to business officers of colleges and universities. The first is entitled *Recommended Classification of Expenditures by Object;* the second, *A Study of Methods Used in Unit-Cost Studies in Higher Education.*

IN THE bulletin of the United States Office of Education by John H. McNeely entitled *Faculty Inbreeding in Land-Grant Colleges and Universities,* Mr. McNeely finds that most land-grant colleges and universities are employing more than too many of their graduates on their faculties.

ADMINISTRATORS of the eleven municipal universities of the United States, as well as students of educational history, will be interested in the 200-page bulletin published during the summer by the United States Office of Education entitled *The History of the Municipal University in the United States,* by R. H. Eckelberry, of Ohio State University.

A NEW problem for administrators of college athletics is that presented by Charles Groh, aged 21, who has just filed a damage suit against Coe College. He alleges that the track coach forced him to enter a cross-country race in 1929 where he ran until he was exhausted. He fell and hurt his spinal column, and has since spent many months in bed. He is suing for $3,500 for medical treatment and $100,000 for damages.

DURING the meeting of the American Chemical Society at Denver this past summer Helen L. Wikoff, of Ohio State University, presented the results of her research on the vocational opportunities for women chemists. She has discovered that most women with chemical training go into research, routine commercial laboratories, hospitals, libraries, editorial or civil-service work. More than half, however, enter teaching. One woman chemistry professor earns a salary of $9,000 a year. Those with M.A. degrees average $600 a year more than those with B.A. degrees, and the holders of a Ph.D. earn $600 a year more than those with M.A. degrees.

MASSACHUSETTS STATE COLLEGE has recently announced the limitation of its freshman class to three hundred, seventy-five of whom are to be women. The plan provides for a total enrollment not to exceed eight hundred fifty.

THE University of Chicago is developing for its own use and for distribution to other colleges, universities,

and high schools a series of talking motion pictures on educational topics. The first unit will be a series of twenty pictures concerning physical sciences, prepared by members of the University faculty.

Through these pictures the University will be able to visualize such experiments in the physical sciences as the "dance of the molecules," the thermal agitation of molecular action which must now be demonstrated to each student through an ultra-microscope. Attendance of a laboratory technician is required under present teaching methods to explain the phenomena as the student makes his observations. Sound films will eliminate this tedious method in such types of experiment, enabling a more effective as well as a more economical method of instruction.

Talking motion pictures will also make it possible to illustrate the action of a transformer by tracing the flow of electrons in association with the magnetic field with considerable increased effectiveness over such devices as charts. Many processes, which under natural conditions require long periods of time for development, can be speeded up for the student by employing sound pictures. The life of a plant, which normally would take months to develop from seed to flower, can be presented in ten minutes, and the picture can be repeated at will.

Illustration of natural processes, such as the development of deltas demonstrated on a stream table at the University, can be achieved in the films, eliminating the necessity of duplicating the equipment elsewhere. Such famous experiments as Michelson's determination of the speed of light can be brought to any classroom in the country with the talking pictures. After the physical sciences have been completed a series in humanities, the biological sciences, and social sciences will be produced and distributed.

COLUMBIA UNIVERSITY has recently completed a plan for a thirty-story skyscraper to be built on Morningside Heights which will supply floor space equivalent to thirty or forty smaller buildings.

THE president of the Prudential Insurance Company, E. D. Duffield, became acting president of Princeton University July 1, to serve until a permanent successor is chosen for President Hibben whose resignation took effect at the end of the past academic year.

THE Laura Spelman fund has appropriated $25,000 to the University of Cincinnati for the establishment of a curriculum on municipal administration. The grant provides for both research and teaching.

THE Association of American Colleges has appointed a committee under the leadership of E. H. Wilkins of Oberlin College to investigate music curriculums in liberal-arts colleges. The Carnegie Corporation has set aside a grant of $25,000 for the study.

A COMMITTEE of three well-known Yale athletes, one now a member of the faculty, one the present chairman

of the Board of Control of the Yale Athletic Association, and one a former captain of both football and baseball, has proposed a new athletic policy for Yale University to begin in September, 1933. The major items of the plan are:

1. All Yale Varsity squads, including football, will be smaller, will omit preseason practice, scouting, inter-sectional games, and special training tables. The football team will play but five games instead of seven.
2. Each of the ten houses under the new quadrangular system will have athletic teams which will compete with one another. These teams will be amateur-coached, and will become in time Yale's major athletic enterprise.
3. By 1935 it is hoped that all undergraduates will be admitted free to Varsity contests.

The plan, even though proposed by these three well-known Yale athletes, is being severely battered by the criticism of undergraduates and alumni.

THE *Bulletin of the American Association of University Professors* for May, 1932, was given over almost entirely to a discussion of academic freedom and tenure during the years 1923–1932. Administrators and faculty members interested in this problem will find a useful compendium of data in this bulletin.

DURING the first half of 1932 three college mergers were reported. Tabor College in Iowa has merged with Doane College of Nebraska under the name of Doane College. Ozark Wesleyan of Carthage, Missouri, has affiliated with Bekar University of Baldwin, Kansas. Mt. Morris College of Mt. Morris, Illinois, has joined with Manchester College, North Manchester, Indiana.

BECAUSE of the economic drought Antioch College has adopted the following plan for financing students:

Annual tuition for students engaged in full-time study rather than on a co-operative plan will be reduced from $425 to $350. Dormitory room rates are to be reduced from $2.50 to $2.25 a week. Food in the college cafeteria is being reduced from about $5.50 a week to approximately $4.50 a week. Mrs. Arthur E. Morgan, wife of the president, is to receive into her family dining room a group of about fifty students on a co-operative basis at a cost of about $3.50 a week. Employment on the college campus will be furnished to students, if other employment is not available, on an hourly basis. It is planned that a thrifty student under this arrangement can have a year at college for about $350.

THE press reports that men students at the University of California are demanding women teachers. They are arguing that young women students are being too successful in attaining high marks by ogling masculine members of the faculty, and they are anxious to correct this disadvantage.

THE Oceanographic Laboratory of the University of Washington, when dedicated June 15, brought a unique group of facilities under university

ownership. The main laboratory is conveniently located on a site with dockage facilities; the other two units embrace the Friday Harbor plant on the San Juan Islands and the *Catalyst*, a cruising vessel to be used in the Sound as well as in deeper waters.

THE University of Washington in June abolished the office of dean of women. The functions of that post will be assumed by a personnel organization to be headed by the dean of men, one of the assistant deans of women, and a man assistant. Women's organizations on the campus and in the state have protested the action. The local branch of the American Association of University Women has asked the national organization to withdraw recognition of alumnae of the University if the plan stands.

IMPORTANT changes in entrance requirements were in effect with the opening of the University of Buffalo this fall. Although the traditional 15 units of high-school credit are still required, greater flexibility has been introduced by eliminating intermediate algebra and foreign languages from the required list. Students, however, will be required to pursue college courses equivalent to the former requirement of two years each of two languages or three years of one language.

Under the new ruling, the subjects presented for admission credit may include a larger amount of music and art as well as technical or vocational subjects. Thus, able students will not be excluded from college simply because they have not met certain arbitrary requirements in third-semester algebra or in foreign language.

LAFAYETTE COLLEGE celebrated the one hundredth anniversary of its founding May 17, 1932.

NEW YORK UNIVERSITY will sponsor on November 15, 16, and 17 a conference at the Waldorf Astoria Hotel in New York City on the obligations of universities to the social order. Among the speakers will be Newton D. Baker, President Nicholas Murray Butler of Columbia, Thomas W. Lamont, Felix M. Warburg, Secretary of the Interior Ray Lyman Wilbur, Chancellor Samuel P. Capen of the University of Buffalo, President Lotus D. Coffman of the University of Minnesota, and President Robert C. Sproul of the University of California.

EARLY in September Chancellor Charles W. Flint, of Syracuse University, announced that the New York State College of Forestry at Syracuse University was the recipient of a gift of 13,000 acres of forest land made up of fourteen parcels of Adirondack forest land and lakes. These newly acquired tracts will be used for experiment and research into the habits, life histories, and management of fish, birds, game, food and fur-bearing animals.

THE Navy Department has recently announced that extensive changes in the curriculum of the Naval Academy will be made for the first time in many years during the current aca-

demic year. For a number of years boards of visitors to the Naval Academy have pronounced the curriculum too technical and too little cultural.

Following the recommendations of these boards of visitors, the Navy Department has increased the cultural subjects in the Naval Academy curriculum from 22 per cent to 32 per cent. In making these changes the Department has announced that the reason for these changes is the realization that high executive positions require better and broader leadership qualities than those developed by narrow technical courses.

Two new and especially interesting colleges will open their doors for the first time this fall: Bennington College located at Bennington, Vermont, and New College, a branch of Teachers College, Columbia University.

Bennington College is the first avowedly "progressive" college for either sex in the country. Ever since the inception of the progressive school movement more than twenty years ago, a small group of educators have been urging the desirability of establishing a college for the graduate of progressive schools. Bennington College is the answer to their many petitions and dreams.

Some of the characteristics of Bennington College are these:

1. It is the first college in the United States to attempt to make its tuition charges actually cover the full cost of instruction.
2. The approach to study in every field will be from the point of modern life. In the social studies, for example, it is proposed that the economic depression be the starting point for a discussion of modern science. Students of dramatics will begin with a study of the current Broadway production, "Another Language," and the novel *The Good Earth* will be the point of departure in the literature course. In all other courses present-day phenomena will be the first topics discussed in an attempt to socialize the curriculum before taking students back to historical data and scholarly generalizations.
3. A complete student-personnel program has been established which provides, among other things, for a careful appraisal of each student's interests before she arranges her course.

Organized with different objectives and from a somewhat different point of view, New College will serve a dual function at Columbia University. The first of these is to provide a regular college course for students intending to teach in the nursery, kindergarten, primary, and secondary schools of the country. The second is to provide opportunities for directed teaching for the students in Teachers College who, during their graduate work, are preparing to become college teachers.

The basic principles behind this new institutions are these:

1. Respect for the individual, including the belief that his growth should be promoted with reference to the good of the social group.
2. Recognition of the functional leadership of the expert.
3. Co-operative social-economic planning.

The core of the curriculum will be four seminars around major fields of interest: science and invention, human relations, aesthetics, and philosophy, religion, and ethics.

·Editorial·Comments·

Faculty Week

DURING the last decade Freshman Week has become a common event in scores of American universities and colleges. This preliminary week of acquaintance, which has been devised to help the Freshman find his bearings in a totally new environment, gives evidences of increasing usefulness. The faculties of the various colleges are interested in the project; each year one-third or more of the members return to the campus a week before the opening to assist in the orientation of the Freshman.

As a supplement to Freshman Week, or as its substitute if that event is not customary, a Faculty Week is proposed. The major purposes of this plan would be to allow the members of the faculty through conferences, discussions, and individual study to review the policies and problems of the college during the previous year and to formulate plans for improvement during the coming year. Such a period of leisurely planning is needed because of the difficulty of finding time for such activities during the year when students are present.

For ten years Stephens College has held annual faculty conferences of ten days' or two weeks' duration before the students arrive. This well-known junior college, with a student body of 600 and a faculty of 60 members, compares roughly in size with the colleges or schools within a large university and is somewhat larger in student population than the average privately endowed college. It has a division of educational research and a director under whose supervision the conference programs are arranged.

The program is simple. The faculty committee in charge formulates plans for the September conference and announces the agenda before the faculty disperses in the spring, so that participants may prepare their contributions in advance. A "post mortem" is held at the end of each conference to discuss improvements for the year. The problems discussed vary from year to year but are of three types: continuous problems such as the improvement of instruction, occasional problems such as the new adviser system, and individual investigations of a wide variety. The conference activities of the current year serve as an illustrative program.

During 1931–32 the experiment of making the librarian the dean of instruction, part of a plan "to make the library the center of the college," was set up by the administrative officers with the aid of one of the foundations. Consequently, ways for the realization of this idea became the topic of a number of programs in which various methods of guiding students to love books and to read them effectively were described by individuals and faculty committees. Through a divisional organization, college activities since 1931 have been classified into the

humanities, social sciences, natural sciences, skills and techniques, and extra-curricular activities, the latter having been co-ordinate with the others and an integral part of the educational program of the college. The problems connected with this reorganization naturally became the major theme of the recent conference, particularly since it was believed that the integration of knowledge for which the divisional organization of the college was undertaken would fail if the integration were not achieved in the classroom by the use of appropriate instructional methods. Reports were made in which the formulation of divisional objectives and the techniques of integration were discussed, and plans were laid for continued study during the year. In addition to such general problems, individual studies were proposed—some of them continuing long-term studies, others initiating new studies. These included such problems as the measurement of skills in English composition, the preparation of pre-tests in the social studies, motion analysis in physical education, and the like.

The value of the conference is evidenced by two measures, the work done and the opinion of the participants. Four hundred twenty studies have been begun by members of the faculty during the ten years. These have all been voluntarily undertaken with no decrease in teaching-load, under the direction of the research division with occasional financial and clerical assistance. These studies vary in quality: some are studies of first rank; others are service studies of minor, local, and immediate value; but the amount is impressive especially when compared with the output of other colleges and universities. Faculty opinion as a measure of satisfaction is favorable. At the close of the 1931 conference the faculty was asked to distribute ten votes between returning two weeks early for the conference, on the one hand, and returning at the time of college opening, on the other. Votes of ten for the conference and none for its elimination were recorded by 86 per cent of the faculty, and in no case was the vote in favor of the conferences less than 5 to 5.

This idea of organization conferences at the beginning of the school year is logically sound. That it is both practical and successful has been demonstrated in the experience of this college over a ten-year period. All in all, Faculty Week is an interesting substitute for or a supplement to Freshman Week. W.W.C.

Admissions and Differentiated Instruction

DURING July the newspapers carried a series of articles reporting the discussions during the Institute for Administrative Officers of Institutions of Higher Education then convened at the University of Chicago. One of these articles dealt with the attempt of the University of Wisconsin to predict the success or failure of Freshmen by means of tests given during their high-school courses. The following paragraph appeared among those describing this work:

So accurately have predictive tests among high-school students been developed in Wisconsin that when experts at the University two years ago forecast the failure of 147

members of the entering freshman class at Madison, the predictions were borne out by the dismissal of 123 of that group at the end of the first year. Only 5 of the 147 have survived five semesters.

There is nothing particularly startling about these figures or in the fact that measurement devices have been so perfected that admission officers can predict with high success the probable achievement of entering students. Other universities, notably Minnesota and Ohio State, have been conducting similar studies for a dozen years or more, and their results have been much the same as at Wisconsin. The important consideration here, as in all statistical studies, revolves about the use that will be made of the facts that have been so painstakingly collected.

In privately endowed institutions the problem is comparatively simple. The demand for a college education has become so great in the past two decades that the better privately endowed colleges and universities have been able to set up admissions methods which, although labeled "selective programs," are in reality elimination programs. The good prospect is admitted; the poor prospect is turned away. Admissions officers at these colleges say in spirit to the poor applicant: "We will not admit you to our institution because we do not think you will make good. You are a poor college risk, and what you do is no concern of ours. That is your problem." For publicly supported institutions the poor risk is not so easily disposed of. Most states require that the universities and colleges they control accept every applicant who has graduated from a first-grade high school within their borders. Despite all the predictive accuracy that admissions officers may be able to achieve, the poor student must by law be admitted along with the able student.

Many state universities are of course following the traditional method of flunking poor students as rapidly as possible with the hope that by the beginning of the junior year all the poorly prepared and the inadequately endowed students will have been eliminated. The social undesirability, if not the downright viciousness, of such a method has unfortunately been too little stressed, but two state universities at least have attempted to devise machinery which will make it possible for them to face the situation at once realistically and humanistically. The philosophy pervading the plan of one of these universities is that the high-school student should be completely informed of the possibilities of his succeeding in college. The philosophy informing the second is the much more significant belief that the university is neglecting its stewardship unless it does everything possible to help a student succeed once he has been admitted.

THE first of these two plans of action has been developed at Ohio State University. Three years ago the University called the attention of the high-school administrators of the state to the need of better counseling for high-school students planning to go to college. H. A. Toops who had for a decade been conducting studies in the relationship between intelligence-test scores and college achievement brought his findings together in

a bulletin entitled "A Suggested Program for Pre-College Guidance." The significance of high-school scholarship, intelligence-test scores, study habits, age, self-support, and numerous other considerations were discussed. Secondary-school administrators were thus given the results of ten years of university research and were urged to counsel with their Seniors encouraging the able student to go on to college and the poor student to weigh his chances against the recorded facts.

This bulletin immediately crystallized the sentiment of the high-school officers of the state, and in January, 1930, the State Department of Education called a conference of high-school principals to discuss the problem of better counseling facilities. Unfortunately, the depleted condition of the state treasury made the development of the planned state-wide counseling program impossible. When better times return, the State Department of Education will likely carry out its plans to see that every high-school student of the state is given adequate counsel, not only concerning his college plans, but also concerning his vocational objectives and his training for them in the event that he does not contemplate a college course.

Meanwhile, the University has carried forward on its own. Since money is not available to appoint counselors in the high schools of the state, the University has set aside several hundred dollars for the preparation and printing of a second bulletin. The first had been for school administrators calling their attention to the need of counseling. The second, which will be off the press this fall, is directed to the students themselves. It is entitled "Preparing for College," and in non-technical language discusses who should go to college, what makes for college success, how to study, how to choose a college course, and what the University does to help students succeed after they are admitted.

THAT the Ohio State approach to the admissions problem is by no means adequate is demonstrated by the much more far-reaching program of the University of Minnesota. For a decade Dean Johnston, of the University of Minnesota, has been struggling with admissions. He and his associates have gone through the entire gamut of devices in use elsewhere. They have carried on exhaustive statistical studies. They have given intelligence tests in the high schools in order to secure predictive data. They have published a bulletin for the students of Minnesota high schools—much less complete, however, than the Ohio State bulletin. They have even undertaken a costly plan of writing applicants individually advising them whether or not their test scores and high-school marks justified college entrance. None of these devices, however, has proved adequate, and this fall Minnesota opens a new junior college organized on the principle of differentiated instruction for students who for any reason do not fit into standardized curriculums.

The new college will admit:

1. Those who wish to pursue courses or curriculums not offered in other colleges of the University.
2. Those who, for financial reasons, have only a limited time for college training.

3. Those who need and wish general orientation in the choice of a vocation and general preparation for it. Many students are not aware of the variety of vocations which may fit their desires, interests, and abilities until they have surveyed such fields of activity as will be dealt with in the courses planned for the college.
4. Those who do not satisfactorily meet the entrance requirements of the other colleges of the University because of lack of preparation in specific subjects.
5. Those transferring from other institutions who do not meet the standards for advanced standing of the college to which they apply.
6. Those who are transferred by mutual agreement from the college of the University in which they propose to register or are registered.
7. Those who might not be accepted by existing colleges because of a lack of preparation to pursue their curriculums.

In setting up its new junior college, the University of Minnesota is making educational history of far-reaching significance. Of many possible methods of meeting the problem of admission to the state university, it has chosen, in fact actually has developed, what seems to be by far the best plan yet adopted by any publicly supported institution. The high-school graduate with disabilities may be admitted and then rapidly flunked out in the hard-boiled traditional fashion. He may, in the second place, be given the facts about his chances of success while he is still a high-school Senior, but these may be completely ignored when he is once admitted to college. In the third place, he may be warned about the possibility of his failing, as he is at Ohio State, but despite expert counseling he will still have a difficult time because he often is unequal to the standard curriculums. Finally, as at Minnesota, he may be told in advance about his inadequacies, but if he chooses to present himself for admission, the University will canvass his individual record and if desirable assign him to a special junior-college curriculum which has been especially designed with his needs in mind.

Setting up a program of differentiated instruction does not, of course, necessitate the establishment of a separate college for that purpose. The University of Minnesota, for example, might have set up instructional programs within the already established colleges or within the departmental units of these colleges. For reasons of their own, the directors of educational policy at Minnesota have chosen to initiate a new junior college. After several years of experimentation they may find that differentiated instruction might better have been provided for within the existing units. That remains to be seen. The important fact now is that one great university has recognized the need of providing a new type of work for students who do not mesh with orthodox curricular machinery. The method is not important—the recognition of the problem is.

At some later time we shall discuss the curriculum and instructional methods to be employed in the new college. For the present, it is enough to observe with enthusiasm that Minnesota has taken a forward step which is at once a victory for democratic education and apparently a solution to the difficult problem of how state universities should handle admissions.

W.H.C.

..Reviews..

Current Changes

CHANGES AND EXPERIMENTS IN LIBERAL-ARTS EDUCATION, *by Kathryn McHale.* Bloomington, Illinois: Public School Publishing Company, 1932. x+310 pp. (Thirty-first Yearbook, Part II, National Society for Study of Education). $2.50.

The volume under review is based upon material collected and organized by the American Association of University Women under the chairmanship of Miss Kathryn McHale. It aims to give comprehensive and authoritative information about what is going on in our colleges and to present and interpret that information in a constructively helpful way.

After an introduction by the compiler, Dean Boucher, of the University of Chicago, presents a clear and readable account of current changes and experiments in liberal-arts colleges. He touches briefly but incisively upon the topics that every college is interested in as, for example, selective admission, educational guidance and personal work, trends in curriculum and instruction changes, educational measurements, and the like.

This chapter is followed by an analysis of and quotations from replies received from 71 colleges to a document that is said not to be a questionnaire but which has certainly all the terrors of such a form. The colleges replying to the request for information regarding significant changes that are in use or projected include many of the most important and progressive of our liberal-arts colleges. It ought to be noted, however, that among the colleges not replying there are many in which important exploratory work in higher education is being done. On the whole, however, the list of replies is as complete as could be expected for such a study.

The analysis referred to is followed by a chapter of excerpts from the writings of a variety of distinguished educators on the major phases of experimental change in liberal-arts colleges. These statements are all interesting, most of them quite familiar, and involve both the advantages and the disadvantages of the self-appraisement which the president of a college or a dean is likely to present concerning his own institution. In reading such descriptions one is inevitably reminded of the remark which is recorded at the end of the sixth day of creation to the effect that, "The Lord saw everything that He had made and behold it was very good."

Even though the compiler of this report may be a trifle enthusiastic in her belief that it ought to lie at the right hand of every college president and dean and department head in America, the fact remains that there are many clear and helpful suggestions contained in the volume as to the aims as well as to the function and techniques of educational work in the liberal-arts college. Occasionally one discovers a gem like the following by President Woolley of Mount Holyoke College which one would not willingly have missed:

> There is a third outstanding need of modern life, which I hardly know how to phrase; perhaps the *deepening of human resources* most nearly expresses my thought. This conception of education is the antithesis of the philosophy of "getting by"; it regards education as for something more than direct application to immediate needs; makes the possessor like the householder "which bringeth forth out of his treasure things new and old."

It is perhaps in this direction that the college of liberal arts finds its peculiar opportunity. The vocational college, the professional school, have definite tasks to accomplish and a definite time in which to accomplish them. The college of liberal arts best performs its task when it does not neglect the storing of the mind with treasures that are not needed for "direct application to immediate needs" (pages 245–46).

H. E. Hawkes
Columbia College

The Library

THE COLLEGE LIBRARY; A DESCRIPTIVE STUDY OF THE LIBRARIES IN FOUR-YEAR LIBERAL ARTS COLLEGES IN THE UNITED STATES, *by William M. Randall.* Chicago: American Library Association and the University of Chicago Press, 1932. xii+165 pp. $2.50.

In 1928 the Carnegie Corporation created an advisory group of thirteen college executives and librarians to plan and promote its new policy of making grants for books to American colleges. That this might be done with full information, Mr. Randall within the next two years visited over two hundred colleges (not universities) in forty-four states, procuring from each data on sixty-five heads relating to size, support, and administration of the college and its library. These data, compiled, combined, correlated, graphically presented and clearly interpreted from all obvious and many ingenious viewpoints, form in the book under review the first thorough study of our college libraries made from reliable, accurate, and reasonably full information.

In reading or using the book, it must be remembered that it is a presentation of facts gathered and to be used for a particular purpose. The conditions revealed show the distinctly unflattering status of the library in the colleges visited, a status presumably much the same as in all the thousand or more American colleges. The facts are presented with the warning that not even the maxima revealed, much less the averages of media noted, represent satisfactory standards, in most cases not even acceptable minimum standards. The closing chapter, however, is devoted to a statement, tentative, of course, of such standards for college libraries as have resulted from this study of present conditions. This chapter, indeed the entire book, is deserving of careful reading by every college president and trustee. To many, especially the more complacent, it will reveal a startling poverty and inefficiency of book resources and administration, and will enforce a newly realized importance of the library in the college. Mr. Randall's investigations must have pricked many college-library bubbles by his discovery that the alleged effectiveness of many book collections, as indicated statistically and rhetorically in the college announcements, was based far too often upon ill-considered or unconsidered gifts (sometimes purchases indeed) of books which bore no conceivable relation to the functions, the curriculum, or the needs of the college.

It should be noted that the Carnegie Corporation, having thoroughly proved the correctness of its surmise that here was a direction in which money might be well spent, as a result of this study has made grants for books of $961,000 to eighty-one selected colleges. It is difficult to imagine an investment of $1,000,000 certain to yield more abundant and significant returns.

J. I. Wyer
New York State Library

THE COLLEGE LIBRARY BUILDING, ITS PLANNING AND EQUIPMENT, *by James Thayer Gerould, with a foreword by Frederick P. Keppel.* New York: Charles Scribner's Sons, 1932. 116 pp. $2.00.

The completion of a study on college library buildings under the auspices of the Carnegie Corporation is just another instance of the recognition of the increasing

importance of the library in the teaching process. The personal experience of the author and wide range of library buildings which he has studied should commend this book to the professional librarian; President Keppel's preface will undoubtedly bring it to the notice of college presidents, building committees, and administrators.

College-library planning has undergone radical changes in the past fifteen years. While the professional library journals include many articles and papers on new developments in college-library planning and equipment, Mr. Gerould's book is the first practical manual to deal comprehensively with all aspects of the college library building. In the words of the author, this book is an attempt "to formulate the principles which underlie the functions (of the college library), and to translate them into the programme for building." All such functions must be considered by the librarian in making out his building program. The librarian's responsibility lies in mastering the principles and applying them in a set of detailed specifications for the architect and building committee. Provided the librarian can clearly define what his requirements are, visualizing to some extent the growth of the library in the future, the architect will then be able to lay out the plans to the best advantage.

This book will be the standard authority on college library buildings for three reasons: first, it provides an authoritative and readable statement of the function of the library; second, it discusses in detail several aspects of physical equipment which have been neglected or only summarily treated in previous discussions, and finally, because it provides a set of standards which should be aimed at in first-rate library service.

An examination of the literature on recent college library buildings fails to reveal any authoritative information on the relative sizes of reserve and general reading rooms, the function, planning, and equipment of seminar, individual study and browsing rooms, stack terminology and space requirements at service points. To make provision for the various requirements of departmental libraries and seminar collections is a vital question that has to be worked out. The solution to these thorny problems is sanely and soundly treated in Mr. Gerould's study.

In general, the minimum requirements which the author formulates go beyond the standards recently adopted in new library buildings, but the arguments advanced appear convincing. When Mr. Gerould recommends that fifteen books to the square foot of stack space is a reasonable working capacity, there is nothing vague about what aspects of the problem are being included and what excluded. In the writer's opinion too many of the standards and formulas recommended in recent discussions on the physical equipment of the library have lacked clarity and definiteness.

Since the manual lacks illustrations and plans it is rather surprising to find no bibliography, either in footnotes or in the appendix. A classified bibliography on various aspects of college library building would be indispensable to the librarian who plans to extend or reorganize his library. It is only fair to add that a volume of college library plans was published this past summer by the Snead Company which will include a comprehensive bibliography on recent college library buildings.

G. R. Lyle
Antioch College

Fundamental Principles

College Teaching, *by Theodore H. Eaton.* New York: John Wiley and Sons, 1932. viii+264 pp. $2.50.

This book is a pioneer in the field of college teaching and should meet a real need. The material and the method of treatment have been tried out for several years in classes at Cornell University. It is planned not as a handbook of teaching devices, but

as a "book devoted to the meaning of college teaching." The author makes no attempt to cover methods of higher education as a whole. He carefully distinguishes between the two functions of university work: teaching, "direct guidance of learning to desired ends"; and provision of resources favorable to self-discovery of aptitudes and self-development of abilities. The latter function is chiefly concerned with the appreciation side of education and with "knowledge for its own sake." Each of these two functions exists side by side in all universities; each is necessary for a well-rounded higher institution; but they should not be confused. The methods suitable to one are not suitable to the other. This book deals only with teaching.

The book is unusual in its mechanical organization and in its method of treatment. One looks in vain for chapters and chapter headings. Instead we find sections. Each section begins with a statement or proposition; this is followed by several examples chosen from college teaching. After this comes an elaboration of the meaning of the proposition in terms of a background of theory and a discussion of the examples cited. This at once attracts attention but becomes somewhat tiresome when repeated again and again. Possibly because he is accustomed to another type of organization the reader is likely to be a bit bothered by the lack of chapters and chapter headings. The examples are for the most part well chosen, and the treatment is interesting and stimulating. There is no discussion of various methods as such—the laboratory method, the lecture method, or the conference, nor is there any adequate discussion of testing or other means of evaluating results. Either the author does not consider testing a part of teaching, or he does not think it worth while to spend time in consideration of it. This is distinctly one of the serious limitations of the treatment. The emphasis of the author is upon fundamental principles underlying good teaching rather than upon a critical evaluation of college teaching as such. This book will appeal chiefly to those college teachers who are not so deeply immured in research as to make them unconscious of the need for improvement in methods. It is keyed up to the thoughtful, analytical teacher who is constantly seeking to improve his work. For such it should prove to be helpful.

ARTHUR J. JONES
University of Pennsylvania

A Vocational Guidebook

JOBS FOR THE COLLEGE GRADUATE IN SCIENCE, *by Edward J. Menge.* Milwaukee, Wisconsin: Bruce Publishing Company, 1932. viii+175 pp. $2.00.

"Vocational guidebooks, by their very nature, can provide no satisfactory solution of the problem [of] finding the exact type of effort which will enable [one's] son or daughter to gain happiness and success in some field of endeavor." Having destroyed the *raison d'être* for his own guidebook, Mr. Menge counters thus: "Here, then, for the first time can students and parents find in one place, just what they want to know regarding the whole field of professional science." So predicating an apparent paradox, the author offers young people a compendium embracing the field of science in 175 pages of facts, statistics, and advice to facilitate one's choice of a career.

His success is worthy, but falls short of his expectancy. The most obscure phases of science are ably classified under the headings: "Mathematicians, the Physical and Chemical Groups"; "The Medical Group"; "Engineering"; and "The Bioliogical Sciences." Usually a brief paragraph deals with qualifications and training; another mentions government positions; others describe research institutions, consulting work, professional societies. The facts are authentic and many of them useful.

With this approach the picture is encouraging, but there are shortcomings. We

agree with the statement which prefaces this review, and fail to see where Mr. Menge has jumped his own hurdle. Choice of one's career is too vital to be made by reason alone. Facts are necessary, but one must be stimulated to feel himself the teacher, the research worker, the practitioner, to sense his niche in the whole field of science, and be brought to appreciate the tasks he will perform and the precise quality of performance necessary to his success. Even then, without a vital appreciation of how he will presumably live his daily life both apart from and as related to his work, he cannot say with any assurance, "This work is for me."

On these intimate, emotive questions Mr. Menge leaves his reader cold. He is right; no vocational guidebook can offer the solution; and we resent his intimation that this volume is a *sine qua non* for American youth on the threshold of a scientific career. Here is a useful array of facts, but as a replete source of information to settle the time-honored question, "What shall I do?" it must take its humble place with the books of Fryer, Rosengarten, Bernays, Crawford, and Clement, and other one-volume efforts to answer this dual cry of heart and intellect.

DONALD H. MOYER
Harvard Alumni Placement Service

A Compilation of Details

THE LIBERAL ARTS COLLEGE, *by Floyd Reeves.* Chicago: University of Chicago Press, 1932. xxxv+175 pp. $4.50.

The title of this book is misleading. One interprets it to mean that here is to be found a presentation of the status of the liberal-arts college. The subtitle identifies it with the survey of thirty-five Methodist colleges which are presumed to be typical of all liberal-arts colleges. The Foreword states that "there has been the attempt to generalize the findings . . . so as to be of interest and profit to all colleges of liberal arts." Within the text of the book there is a compilation of details that may be of interest to the individual interested in this group or type of colleges, although, as stated, the details pertaining to the particular colleges are to be found in a separate survey report submitted directly to the colleges surveyed. In addition, there is a certain amount of generalization, much of which lacks any great interest or value because it is a recapitulation of generally accepted practice in the administration of colleges and universities.

The presentation is doubtless reasonably accurate for colleges of the strictly denominational type. Whether it describes the liberal-arts colleges of the large universities or the large independent liberal-arts colleges might well be questioned. No comparative data are shown to make clear this point. Reliable data easily available might have been introduced to support attitudes taken by the authors and thus the title could have become more significant. Or if the authors had written two books, one a summary of their findings in the survey of Methodist colleges and the other a brief epitome of appropriate generalizations from these findings and from other data, a greater service might have been rendered.

In spite of the critical attitude just taken, the writer has found valuable discussions in this volume. Especially worth reading are Chapters XV to XVIII dealing with college libraries. This part is clear and convincing in setting forth the essentials in proper library practice in a liberal-arts college.

Any faculty member or any college administrator would do well to read these chapters. In other chapters there are many valuable data to be used for comparative purposes. The individual reader will find parts of the book that are excellent for reference in regard to his particular problems, whether he be layman, faculty member, or administrative officer.

C. C. MCCRACKEN
Connecticut Agricultural College

In the Lay Magazines

"The Scholar in a Troubled World," by Walter Lippmann, *Atlantic Monthly*, August, 1932.

The always facile pen of one of the foremost American writers has produced a timely article which introduces a novelty for Mr. Lippmann—the contribution of a stabilizing sentiment. The *Atlantic* will surely be commended for giving permanency to this essay, originally presented as the Phi Beta Kappa oration at the graduation exercises of Columbia University.

"Universities, Graduate Schools, and Colleges," by A. Lawrence Lowell, *Atlantic Monthly*, August, 1932.

The president of Harvard argues for the individual, not for organized or systematized, preservation and encouragement of the scholar in America.

"Our Sporting Grandfathers," by Arthur C. Cole, *Atlantic Monthly*, July, 1932.

A professor of history turns to the history of sports and athletics in American schools for an interesting account on a subject with rather wide interest and appeal.

"The Pedagogues Leap to Save Us," by H. E. Buchholz, *American Mercury*, July, 1932.

Summer lethargy for many was undoubtedly disturbed by this scathing denunciation of the present status of the National Education Association. Educators who did not see this issue will perhaps be better prepared for future controversy if they look it up before summer magazines are banished to the temporary oblivion of the bindery.

"Education at the Crossroads," by Norman Boardman, *North American Review*, August, 1932.

A fervent plea for the preservation of such individuality as lies in education is presented here. The author argues against

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state education, lest it serve the ends of nationalism. "I can see no hope for the world so long as education is made to serve such an end. An education which is not definitely international in outlook today is a positive menace to civilization." The article will furnish much material also for peace propagandists.

"On Learning to Read," by Lee Wilson Dodd, *Atlantic Monthly*, July, 1932.

The teacher of literature must be a teacher of reading and a master of that art. Then only can the teacher lead the student-reader on to "a catholic appreciation of the better books of the world."

"Universities and Religious Indifference," by Bernard Iddings Bell, *Atlantic Monthly*, September, 1932.

Lest cynicism become irretrievably allied with science, universities are urged to consider the place of religion in contemporary life. The sane relation will be discovered by people who "see life without bias, who realize that religion is not magic, not merely morality, but rather a seeking for what the mind cannot otherwise grasp."

"Radio Goes Educational," by Travis Hoke, *Harpers*, September, 1932.

A distinctly unfavorable account of educational broadcasting is this written by a former newspaperman. Its hasty and sweeping tone precludes very thoughtful consideration.

"The Disadvantages of Being Educated," by Albert Jay Nock, *Harpers*, September, 1932.

"Education, in a word, leads a person on to ask a great deal more from life than life, as at present organized, is willing to give him . . ." declares a writer who avers that academic training is not a good preparation for accumulation of economic advantages.

FRANCES KIRKPATRICK